

ORIC OWNER



JUNE/JULY 1984

ORIC'S INVENTOR INTERVIEWED

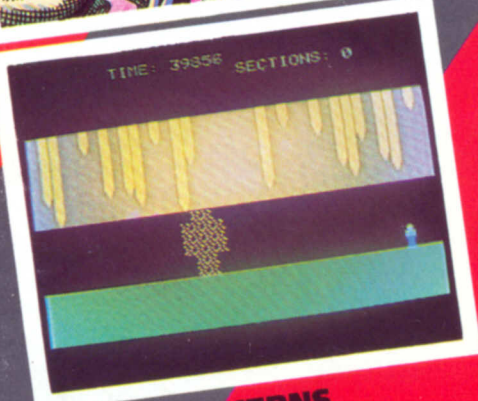
SOFTWARE – PLAY THE SLOTS ON ORIC

SOUND COMMANDS MADE SIMPLE

MICRODRIVES ON TEST



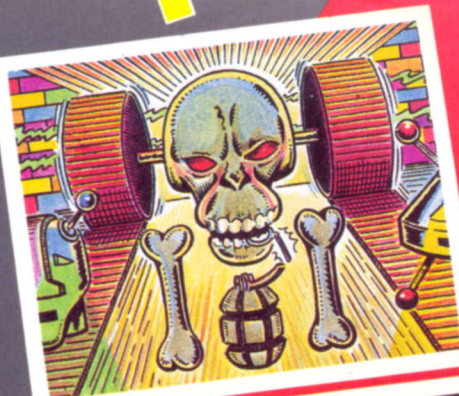
A name to
PLAY with



KILLER CAVERNS

By Daryl Bowers for the Oric 16/48K
VGC 5001

Poor Helpless Harold, he alone knows where the Treasure Chest is. All he has to do is reach it! Armed only with the knowledge that whoever secreted the treasure placed it down a deep well by using a ladder, and then broke the ladder into 17 sections, dispersing them in the famous KILLER CAVERNS systems, YOU must guide Harold through the system of caverns, trying to avoid their Deadly Perils. If you find a piece of ladder you must retrace your steps to the well, where you can place it (and in recognition of your achievement obtain an Extra Life). **HAPPY HUNTING!**



THEM A PARANOID FANTASY

By Andy Green for the Oric 16/48K
VGC 5002

Atmos
Compatible

THEM is a paranoid fantasy in 5 parts.
1. **TRAPPED** Avoid the walls and seven different types of THEM that are after you!
2. **BLOCKBUSTER** Build a tower out of the blocks, all of which are of different size and run at different speeds.
3. **SURROUNDED** Dispel the taunting Demons who have encircled you.
4. **CONVEYOR BELT TO DOOM** You dream that you are trapped on a Conveyor Belt to Doom. Blast the Nightmares to stop the Conveyor Belt.
5. **SOULSAVER** You come across eight fellow travellers. Unfortunately THEY caught them and removed their funny bones. THEY smashed the funny bones into two and mixed them up.

SPECIAL OFFER

It's save money time. You can now purchase, either of these Oric games for £4.95 each instead of the normal £5.95. Buy them both for £8 and save £3.90! Include's postage and packing. Send your cheques to, **I WANT TO SAVE MONEY** DEPT., Virgin Games, 61-63 Portobello Road, London, W11. (Mail Order Only)



£4.95

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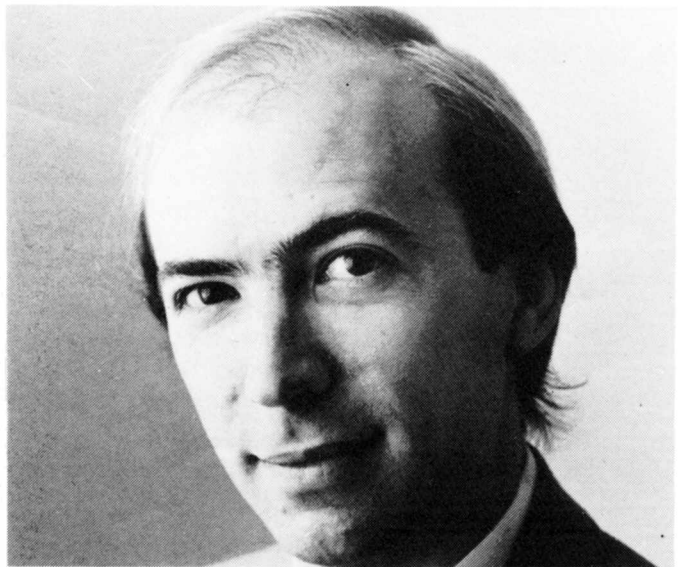
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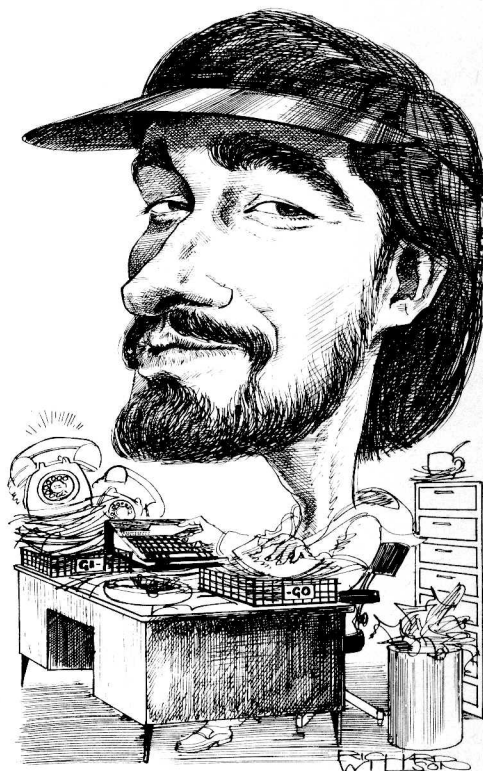
Not many corrections this time

Cover illustration by Malcolm Ryan

Editor's Comment

-Oric Owner

Editor: Kester Cranswick
Assistant Editor: Carolyn Groeneveld
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King's Hedges Road Cambridge



Phew! It's been hectic since my last Comment. We've had 50 new subscribers to add to the mailing list – every week. We've had the new Microdisc to try out, and I've been getting to grips with the Atmos. It is a real improvement over my Oric-1, and I'm sure that, with all the TV advertising, it will be a big success. If you already have an Oric-1, be sure to enter our competition – you might win a free upgrade.

The upgrade was one piece of good news, though it isn't exactly cheap. If you use your Oric-1 for either word processing or file management, an upgrade will really help.

The new Microdisc units are already working for Oric Owner. They are storing records of Oric and Atmos software, distributors and other such information. We are using the Author word processor package and an MCP-40 printer to generate copy too – the office is largely electronic.

As well as all that, I managed to catch up with Dr Paul Johnson. Some of his comments have been pre-empted by recent news, but I

came away with the impression that he has plenty more ideas up his sleeve.

Their new Sales and Marketing Director, Terry Shurwood, has some exciting plans too. If you visit this month's Personal Computer World show at Earl's Court, in London, you'll be able to join the Oric Club. It is being launched there and, whilst I can't divulge too much, it is safe to say that you'll be able to recoup your membership fee very quickly if you take advantage of special, member-only offers.

By that time, you should be able to program a fanfare on your Oric. In response to many requests, we have a major feature on the sometimes confusing sound commands of the Oric. They aren't that difficult if tackled methodically and they are certainly able to produce a huge variety of sounds. You didn't know you had an Oric synthesiser, did you?

The programs this issue should provide something for everyone. Puss in Boots is a lighthearted adventure, while arcade fans can have a crack at Star Cruiser. The slot machine harks back to more traditional arcade games, and gives a winning chance too. Tape Store is a genuinely useful utility for indexing music collections. It saves data to tape too. Finally, Arithmetic Invaders tests maths skills and entertains at the same time. If you have any better programs – let's see them.

Next issue will be the last bi-monthly Oric Owner. The October issue, available in September, will be a monthly magazine. It will also be available through all good newsagents – so if you aren't a subscriber, place an order.

So, with a monthly magazine to launch, Oric Club to organize, software to review, your programs to try out and all the computer shows to attend, your's truly is likely to be breathless for a while longer.

Kester Cranswick

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ORIC GOES TO HARRODS



Harrods boast that you can buy anything in their giant London store. Now you can buy Oric products.

A recent sales agreement means that stocks of the Atmos are now available

through Harrods. Part of the reason for the decision to stock the Atmos was its RGB socket. This feature has proven very popular with overseas customers in the computer department.

ATMOS SOFTWARE EXPANDS

Good news for Atmos owners is that the software available for the machine continues to increase. At last count, 23 software manufacturers were making Atmos compatible software.

In addition, some companies are running a software exchange scheme. Tansoft are currently exchanging any Oric-1 software for the Atmos equivalent at a cost of £3.00.

Major software houses to convert to Atmos software include Arcadia, Durell, IJK, PSS, Salamander, Softek, Severn, Tansoft and Virgin.

Different software companies have adopted different approaches to the conversion. IJK Software Ltd were told about the new ROM last year and all their games since September, 1983 have been suitable for both ROMs. Managing Director Ian Sinclair explained that IJK used its own operating system

in the RAM and any calls were made to that. If there were any Machine Code calls that caused problems, an either . . . or routine was used. "As Oric gave us plenty of warning about the new ROM, we haven't had any major problems", he said. IJK would exchange any old Oric-1 software outdated by an upgrade for the £1 handling fee.

Tansoft have had to rewrite some of their programs (Forth, Oric-Mon, Oric Munch for example) so there are both Oric-1 and Atmos versions available. Some of their software will run on both machines though.

So, if you are an Atmos owner, rest assured that most of the software offered to you will be suitable. If in doubt, check with the dealer or supplier, or if buying mail order, say that you own an Atmos. You shouldn't have any problems.

MADE IN BRITAIN

New agreements by Oric Products International mean that more of their manufacturing is concentrated in the United Kingdom.

Oric have entered a joint venture with Kenure Plastics Ltd. to manufacture Printed Circuit Boards (PCBs), microcomputers and other electronic systems. The joint company is called M3 and is operating from a 20,000 square foot factory on the Hampton Farm Industrial Estate, at the London end of the M3.

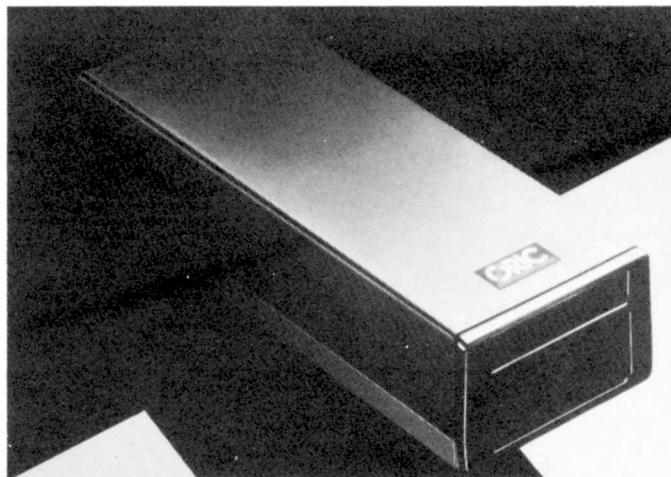
The first product to be made there is the Atmos, and the latest auto testing and assembly techniques are being used in the making of this machine. 10,000 units a

month are planned.

Oric have also signed a PCB manufacturing agreement with the Welsh firm. A+A. This company is now making some of the Atmos PCBs.

Orics now have three sources for their Central Processing Units (CPUs), and more than a dozen other component suppliers in addition to the main supplier, Inmos. Oric are thus safeguarding themselves against any problems that may arise in one section of a very volatile industry. The new production facilities also mean that the cost of manufacture is on a par with that of Eastern manufacturers, keeping costs down.

MICRODISCS ARRIVE



Announced over a year ago, the long awaited Oric Microdiscs have finally arrived. In fact, there is an order form included in this issue of Oric Owner. The price, per unit, is £299.

Finished in Atmos colours, the sleek looking disc drives use the new 3" discs. Each disc holds 160K of memory on each side, transferred at the rate of 250K bits per second. There are 40 tracks, each with 16 sectors of 256 bytes. This will handle up to 640 files per side.

The Disc Operating System

supports thirteen commands. A whole disc can be copied, or just a file. Files can be deleted, a directory of files displayed. . . . see our review for full details.

The Microdisc units are compatible with the Oric-1 as well as the Atmos. It is also possible to run up to four units together for colossal memory storage. At a later date, Oric plan an 80 track option too, doubling the capacity of the discs.

Supplies of the new drives aren't huge, so place orders promptly.

ATMOS UPGRADE ANNOUNCED



After months of speculation, Oric Products International Ltd. have unveiled plans for upgrading of existing 48K Oric-1 computers. The upgrade is to cost £60.

16K Oric-1 owners will also be able to upgrade to a 16K Atmos for the same amount, but not to 48K Atmos specifications.

For that price, the upgrade is comprehensive. The old Oric-1 machine will have the new ROM installed, the new typewriter style keyboard, the black and red casing of the Atmos and comes with both an Atmos manual and a full twelve month guarantee. It will, to all intents and purposes, be an Atmos computer.

To get your upgrade, send your Oric-1, with no cords or power supplies, but securely packed to Oric Manufacturing

Unit 11, Hampton Farm Industrial Estate, Hampton Road, Hanworth, Middx. The turnaround time is expected to be 28 days, though that depends on how much demand there is for the service.

The new ROM chips have been obtained in addition to those required to meet production targets for the Oric Atmos, so the upgrade does not mean less Atmos models will be made.

Oric have also put paid to the rumour that they were planning to recall some Atmos machines to replace the ROM. The story arose from an article in a weekly computer magazine, in which the new and old ROMs were confused. There have been no reported problems with the Atmos or upgraded Oric-1 computers.

Programs on disc

Tansoft have announced that a number of their utility and business programs are to be converted to disc. The programs are Author, Oric Base, Oric Calc and Forth. Prices for disc programs have

yet to be decided.

Tansoft are also planning to supply blank discs and a head cleaner for the Microdrive unit. Check with them for prices and availability.

XENON-3?

IJK are planning the release of the third in the Xenon trilogy. Due shortly, it is

called 'The Final Conflict'. It is the follow-up to Zorgon's Revenge, itself the sequel to Xenon-1. So, all you alien zappers, start saving for The Final Conflict.

MCP ADD ADD-ONS

Swansea-based Modular Concept Peripherals have launched a number of new accessories for Oric computers. They include a programmable joystick interface and an RS232-C interface that allows a modem to be used with an Oric.

The joystick interface connects to the expansion port, using a different system to that of the PASE interface. The MCP system does not interfere with sound. There are ports for two joysticks, and they could be used as general purpose I/O ports. MCP have circularized leading software houses and are hoping that software will be produced to take advantage of the new interface. The unit costs £23.70.

At £38.50, the RS232-C interface unit comes with Prestel software. It can be connected to a Telemod modem and then gives the Oric owner access to Prestel.

The third accessory from MCP is an RS232-C switch. This allows the switching of two peripherals, such as a modem and a printer. The switch costs £37.00.

create a character. That character is then played through an adventure. The Runelord Masterpack consists of the character generator and a scenario, The Pits of Doom. MCP plan an initial set of ten modules for the adventurer.

The games use both text and graphics. MCP plan to introduce games that take advantage of their speech synthesiser. The initial Master Pack of Character Generator Module and The Pits of Doom scenario is available for the Oric-1 at a price of £7.50.

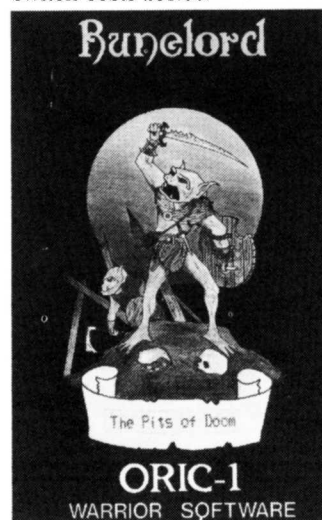
SPORTING ATMOS

A leading sports agency has chosen the Atmos computer as the heart of a computerised data system being established in the United States. All Sports International are also planning to use the Atmos to access mainframes in selected hotels to provide a Prestel-type magazine.

All Sport have been providing sport-related data for over a decade. The cost and inconvenience of conventional storage media has led them to adopt computerised data bases - from Oric.

All Sport are using their American links to make their data banks more accessible. Companies like the Reporter Publishing Company, who produce over 60 newspapers, will be supplied with stocks of Atmos computers. The data they need access to will be stored on tape, for instant use by the reporter.

There are also plans to provide hotel magazines, using a modified Atmos to access the system. The Atmos will be able to download pages of information, games and so forth from a central mainframe. The attraction is that the system is easier to update and cheaper than printing a magazine. One large chain near Disneyworld is apparently very interested.



MCP have also released an adventure game. Runelord employs a novel concept. A character generator is used to

On The Bookshelf

An Introduction to Programming the ORIC-1

R. A. & J. W. PENFOLD



R. A. & J. W. Penfold
Bernard Babani Ltd.
92pp £1.95

Here's a handy, inexpensive companion to the Oric-1 manual that is well worth its modest price. It is also extremely valuable to the owner with a little electronics expertise who wants to interface the Oric-1 with various peripherals.

Though not a flash, expensive volume, it is well organized. It assumes the reader has struggled through the manual, so doesn't cover too much ground that the manual has thoroughly dealt with. Resumés of main points are frequent, and they are logical, concise and useful refreshers.

The reader will pick up many useful tips, particularly in the chapters on sound and attributes. Program listings are kept to a minimum, with just two lengthy listings. One of these is a simple game, the other a useful telephone directory, complete with array saver.

A chapter on interfacing contains all you'll need to know to connect your Oric to the outside world, though it is written for the DIY enthusiast. If that is your field, this book is a must.

For the Oric owner after some sound information on areas the manual skimps on, this book is a gem.

Ian Stewart/Robin Jones
Shiva Publishing Ltd
164pp £5.95

Books to complement or replace the Oric manual are legion. This is one of the better ones if you are new to computing, and have struggled through the manual.

The style is chatty, witty and very entertaining. The authors have tried to inject a sense of fun into the proceedings.

Projects feature heavily in this book. They encourage you to experiment and make sure you have absorbed the lessons.

The ground is covered pretty thoroughly, though

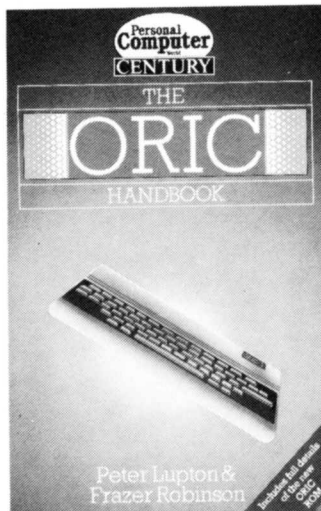


there will invariably be chapters you'll be able to merely skim through. The strongest chapters are a series on debugging, the music section and details of attributes.

Other books may cover certain areas more thoroughly, but this volume gives a good grounding and encourages you to try things for yourself.

The more esoteric aspects of the Oric (Machine Code, Boolean algebra and so forth) are left well alone. There is also no mention of the new ROM, and bugged commands are carefully avoided.

So, although other books may have more information to impart, this one is very 'user friendly'. As such, it will appeal to many users, and at £5.95, is not over priced.



Peter Lupton & Frazer Robinson
Century Communications
250pp £5.95

Designed to complement the Oric-1 manual, and with full details of the new ROM, it is an informative, readable work.

It starts with setting up the Oric and then deals with most areas of its operation. Depending on your expertise, you may be able to skim through some of the earlier chapters, though there are more than a few useful hints.

Each chapter features short demonstration programs and a convenient summary at the end. The large type size is also an asset too.

Most books are better in some areas than others. In the case of The Oric Handbook, graphics is the strength. The authors deal with TEXT, LORES and HIRES display modes in more depth than most other books put together. LORES, in particular, is a subject often overlooked.

Other worthwhile chapters deal with Boolean logic, the new ROM and there is a helpful appendix with advice on how to speed up programs.

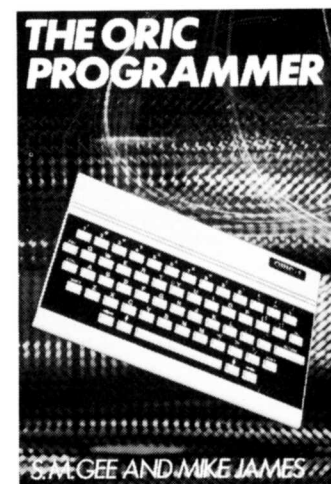
The book contains several complete program listings. They are for a drawing aid, a synthesiser, a Mastermind type game and a simple line renumber.

S. M. Gee/Mike James
Granada Publishing
161pp £6.95

Everyone, it seems, wants to teach you how to use your Oric. This recent volume is yet another book designed to supplement and augment the Oric-1 manual.

It is considerably better than the manual, though that's not hard, and covers most of the Oric commands pretty thoroughly. Indeed, even if you are an experienced user, there are more than a few tips to be garnered from The Oric Programmer.

There are no particular areas in which this volume shines. The authors have

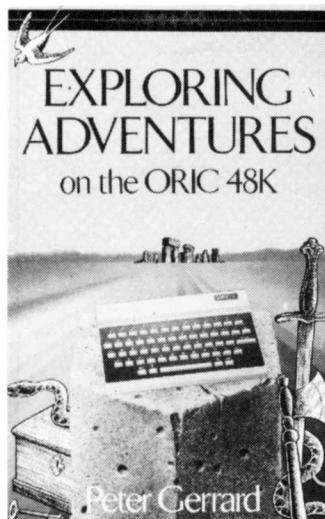


adopted a logical, practical approach to programming, and given plenty of examples to work on. Much of the material can be skimmed through if you are already familiar with certain aspects of Oric's BASIC.

The final few chapters get to grips with Boolean logic, PEEK, POKE, POP, PULL and other more esoteric commands. There is also a useful appendix that details the bugs of the V1.0 ROM, and how to cure them.

There is no mention of the new ROM, the Atmos, the printer unit or the disc drives. At £6.95, this isn't a book we would wholeheartedly recommend. It is good, and widely available, but we have seen better books for the novice Oric owner.

On The Bookshelf



Exploring Adventures on the Oric 48K
Peter Gerrard
Gerald Duckworth & Co.
238pp £6.95

Peter Gerrard is perhaps better known for his writings on the Commodore computers. This book is an Oric-ified version of an almost identical book for the Commodore.

It's aim is to teach the reader all about adventure games. There is an introduction to the genre, a survey of the sort of games available, hints on how to master games and some ideas for your own adventures. However, the bulk of the book is given over to writing your own programs and the listing of three fairly lengthy games. A cassette is available.

The author is firmly against graphics in adventure games. That side of things is up to you. However, he does give a very good guide to the techniques of writing an adventure program, and does explain how the facilities of an Oric can best be used.

The approach is to introduce broad concepts first, and then to tackle different routines in the main game, Underground Adventure. That game employs most of the tricks, and studying it will give you a good grounding in adventure game programming.

The Computer & Video Games Book of Adventure
Keith Campbell
Melbourne House
138pp £5.95

A foreword by Scott Adams, the adventure games maestro, establishes the credentials of this volume. It is a guide to writing your own adventures, and includes a listing of a simple adventure.

The author starts with a general introduction to the world of adventure games and moves onto a review of a number of selected games. The Hobbit and Franklin's Tomb warrant a mention here.

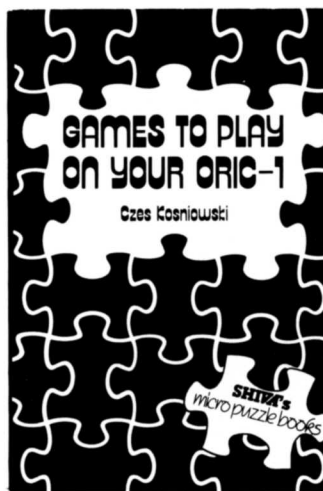
The rest of the book is



concerned with how to write an adventure game – the one listed in the book. By studying that game and the techniques used to write it, you should gain a pretty fair grounding in the art of adventure game programming.

If you are already able to program an adventure, there is little to be gleaned from this book. It is not orientated towards the Oric specifically, but as the Oric's BASIC follow standard BASIC practices, the information is valid.

The various chapters deal with locations, objects, movements, actions, screen displays and so on. Examples are taken from the listed program. It takes little thought to grasp the principles behind the sections.



Games to Play on Your Oric-1
Czes Kosniowski
Shiva Publishing Ltd.
128pp £4.95

As so few magazines seem to publish programs for the Oric (Oric Owner excepted of course), books like this have a ready market. This slim volume is a pretty fair effort.

None of the games are terribly sophisticated. That makes them reasonably short and they could always be improved on, to give better displays.

There are 30 listings in all. Some old favourites are there – Mastermind, Hangman, Breakout, several versions of Centipede, Lunar Lander and so on. There are also four musical programs and five graphics demonstrations.

The rest of the games are largely puzzles of one sort or another, a smattering of two player games and a few other games. It is the sort of collection likely to appeal to more mature owners.

All listings are claimed to be, and appear to be, bug free. That is creditable. Each game also has a simple screen display shown, a brief description and some program notes. No GOTOs are used – a feature the author is very proud of!

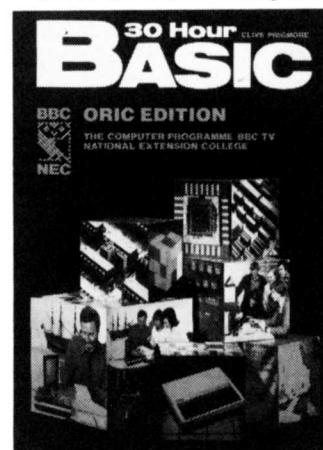
At £4.95, this book is certainly affordable. If you like puzzles, it's worth buying.

30 Hour Basic – Oric edition
Clive Prigmore/Paul Shreeve
National Extension College
268pp £6.95

30 Hour Basic is a textbook introduction to BASIC programming techniques. It has been around in a general, BBC orientated version for some time. This is the Oric edition.

It is not a book that teaches you how to use your Oric. Rather, it sets out to explain the concepts behind programming. There are frequent questions and assignments to be tackled. The book is designed as the core of an NEC course.

The book is little changed



from the non-Oric version. The chapter on file handling has gone, to be replaced by a section on Oric's sound and graphics commands. All listings have been altered where necessary too.

The areas covered include loops, strings, arrays, program structure, random numbers, screen outputs and so forth. Some commands, such as TAB are assumed to work – an annoying thing for Oric-1 owners.

Anyone who perseveres with this book will end up with a much better knowledge of programming. There is obviously more to be said about some of the Oric's features, but if you have ever wandered just where to start with BASIC programming, this is the book for you.

Software Scan



Defence Force
Tansoft
Oric 48K
£7.95

Zap 'em games don't come much more sophisticated than Defence Force. With 16 types of aliens, 20 waves of attackers and fast, furious action, this game will keep your trigger finger busy for a long, long time.

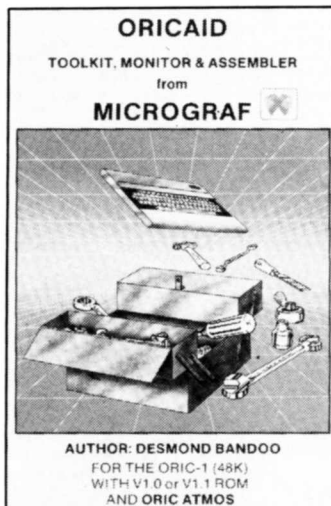
The well-packaged program takes six minutes to load at the fast speed - a long time. The main instructions are given, plus a display of the aliens, a hall of fame and the options. The beginners game is low scoring but welcome if you are new to this type of game.

Your aim is to dispose of various attackers, while safeguarding your men. You have four lives and a number of shields to ward off attacks.

If all your men are lost, you move to an Astral plane, where survival is almost impossible. Perhaps that's why there is a suicide key!

At the top of the screen is your score and a map of the surrounding area, so you can see what's coming.

Graphics and sound are excellent, and if you like space shootouts, Defence Force is a must.



Oricaid
Micrograf
Oric/Atmos 48K
£11.95

This comprehensive package contains a BASIC toolbox, a Machine Code monitor and a Machine Code assembler.

There are fast and slow recordings of the Machine Coded program for both V1.0 and V1.1 ROMs.

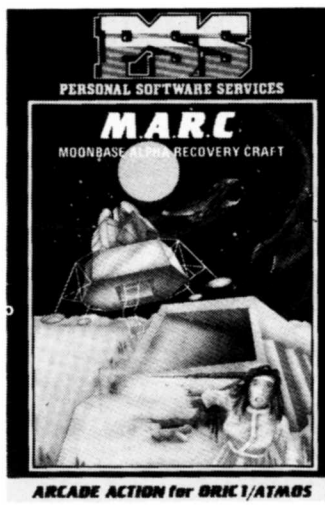
The toolkit has eleven commands for the Oric-1, nine for the Atmos (Verify and Append are part of the Atmos' BASIC commands). There are block line delete, renew, automatic line number, line renumber, append and verify routines.

Other commands are a protective device - to prevent LISTing of your work, a FIND command to list any line that has a particular command in it, and a shrink command that removes all unnecessary REMs and spaces.

The monitor gives Hex/Decimal conversion, searches for particular byte sequences, RUNs Machine Code routines, relocates or transfers blocks of memory, displays register values or memory contents.

The assembler lets you enter Machine Code as a BASIC program of Mnemonics and addresses.

Facilities	★★★★★
Instructions	★★★★
Ease of Use	★★★★
Value	★★★★



M.A.R.C.
PSS
Oric/Atmos 48K
£6.95

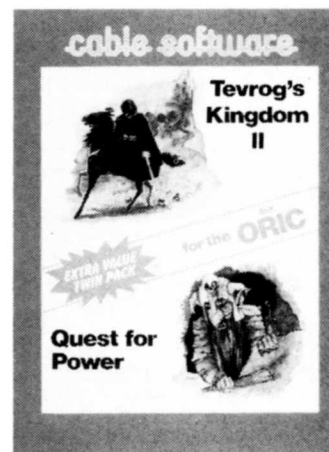
M.A.R.C. stands for Moonbase Alpha Recovery Craft. That's what you control in this arcade game, and it is your mission to safeguard five cities on the moon.

Trying to thwart you are squadrons of bombers out to destroy cities. If they destroy one, the two scientists it contains flee. You have to pick them up before they are snatched up by other jumping men. While all this is going on, you also have to avoid heat seeking bugs after you, and save enough energy to keep your craft flying.

It sounds complicated, and at first it is. You have no fewer than seven ship control keys. They control left and right motion, movement 'in' and 'out' of the screen (the game has a simulated 3D display), firing, ladder lowering and up. There is also a key to halt the game and another to restart it. You'll need nimble fingers and plenty of practice to master M.A.R.C.

The graphics are excellent, considering the number of elements in the game. Sound can be set to any of ten levels and control keys redefined.

Originality	★★★★
Sound	★★★★
Graphics	★★★★
Addictiveness	★★★★
Value	★★★★



Tevrog's Kingdom
Cable Software
Oric 48K
£9.99

This text-only adventure game comes with a second game, a Wumpus derivative called Quest For Power.

Star of the show is Tevrog's Kingdom. It is a BASIC program with the usual adventure locations of caves, a palace, outlands and so forth. The game is played in a real time framework and objects are placed randomly at the start of every game.

Loading takes a few minutes at the fast speed. The instructions are very minimal, and if you are unaccustomed to adventure games, you'll find communication very frustrating.

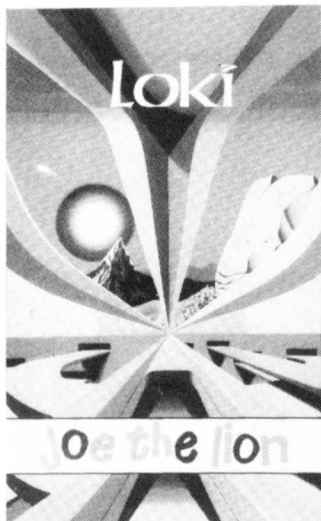
The game text is kept simple and commands are acted on quite quickly, apart from the odd garbage collection pause. There is nothing radical about Tevrog's Kingdom, and the only reason to play it is to solve it.

Quest for Power is played in a grid of rooms containing weapons, charms or monsters. It is more amusing than the longer game, and has some loud sound effects. Use a pen and paper for a guaranteed solution, play from memory if you enjoy being killed.

Originality	★
Graphics	N/A
Sound	★
Addictiveness	★★★★
Value	★★★★

Originality	★★★★
Sound	★★★★
Graphics	★★★★
Addictiveness	★★★★
Value	★★

Software Scan



Loki
Joe the Lion
Oric 48K
£6.45

This game is a space shootout type, despite the Nordic name. The only mythological connections are that the enemy attackers have the names of Norse gods.

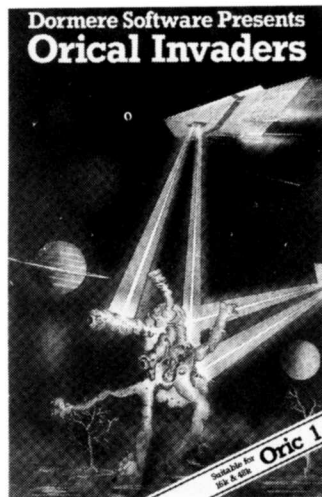
The aim is to destroy successive waves of attackers. Each 'universe' has eight waves. The first three take place at ground level.

After the third wave, you move to a starfield, where all four movement controls are needed. There are five waves to overcome here, before getting back to a harder ground level.

The changes of waves are marked by different sound effects. This game makes the most of the Oric's sound potential. The waves don't fire back, so getting through them is really a matter of just keeping the fire button pressed. You have five lives.

A running score, high score, number of lives, universe number and wave number are shown at the base of the screen – if you have the chance to look that far. Loki proceeds at a giddy pace.

Originality	★★★
Sound	★★★★
Graphics	★★★
Addictiveness	★★★
Value	★★★



Orical Invaders
Dormere Software
Oric 16/48K
£5.95

With the opening strains of the aliens theme from 'Close Encounters', you're launched into another Space Invaders game. It will fit the memory of a 16K Oric-1 and that is good news for 16K owners.

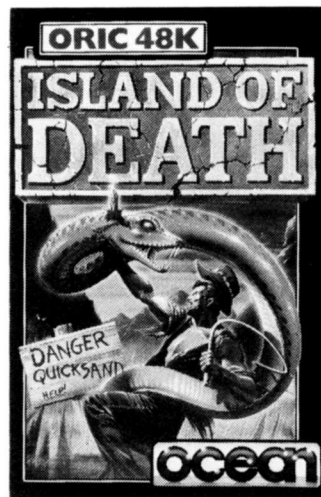
The controls are simple, with the handy provision of two keys for both sideways movements. The space and return bars fire. Other useful controls are A for abort, Q for return to BASIC, F for pause and S for restart. More games should have these features.

Apart from this, the game is standard Invaders fare. There are four types of invaders, four bases and an extra base at 2000 points. You have three lives. There is a Hall of Fame too.

Volume is fixed and not too loud. The graphics are quite good, but break no new ground. Each wave has five rows of eleven aliens.

As Invaders games go, this is a fair effort. The fact that it is 16K is an asset, and there may well be Oric owners who want to have a crack at an arcade classic. This Dormere version is perfectly adequate for that.

Originality	★
Sound	★★
Graphics	★★
Addictiveness	★★★
Value	★★★



Island of Death
Ocean Software
Oric 48K
£6.90

Ocean have come up with a novel way to pack plenty of relatively simple games onto one cassette. The idea is that you arrive on an island, and survive by playing the games.

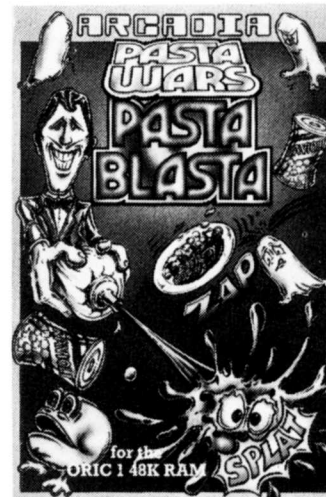
The opening sequence is musical and visually clever. Throughout the game various tunes play rather loudly.

The games are things like Frogger, obstacle courses, fishing situations, Light Bike and so on. The graphics are varied and some are quite amusing. When you finish one game, you are offered a choice of directions, as you might be in an adventure game, and that sends you to the next challenge.

The only annoying thing about this game is that if you don't keep a track of your movements, you may end up playing the same game over and over again.

Given this proviso, Island of Death is an interesting package, particularly if you like your games with a little humour, plenty of variety and a reasonable chance of success.

Originality	★★★
Sound	★★★
Graphics	★★★
Addictiveness	★★
Value	★★



Pasta Wars
Arcadia
Oric 48K
£5.50

Those Arcadia people must have some very strange dreams. Pasta Wars is one of the most original games so far released for the Oric.

You control the Pasta Blasta, and your task is to safeguard six tins of ravioli. Bloblike Pasta Pinchas are trying to steal them, while Pac Persons are after you.

You can rotate and move or fire in the direction you are pointing. By gobbling up Pasta Power Pills, you replenish energy, and Pasta Prizes give bonus points.

PASE compatible joysticks can be used and will certainly improve your game. The possible movements take a little getting used to and it will be some time before you master Pasta Blasta.

The sound level can be varied from off to loud, and the sounds are very cute. In fact, the whole game has a cuteness about it that appeals to less warlike natures.

There is a hall of fame, an excellent set of on-screen instructions and a two player option. If you like slightly off beat arcade games, Pasta Blasta belongs in your library.

Originality	★★★★★
Sound	★★★★
Graphics	★★★
Addictiveness	★★★★
Value	★★★★

Software Scan



Starship
Sector 7 Software
Oric 48K
£6.50

Every self respecting software company should have its own version of Space Invaders – shouldn't it? Well, if you still haven't mastered the game, here is Sector 7's offering.

The loading sequence is embellished by an excellent HIRES display of the combatants.

After that, it is the old pattern, though with rather better spaceships than usual. You have three lives to wipe out waves of invaders. There are nine types of aliens that come in waves of 56. You can move left and right with the cursor control keys, fire with the space bar. There are no bases to shelter behind though – a difference from the classic Invaders.

The sound level can't be varied or turned off and the sounds are not very adventurous. The controls give a slow-ish response too – that's the penalty for all those pretty drawings.

The graphics are certainly the best feature of this game. If you fancy a crack at an Invaders game that doesn't quite copy all the others, this one is worth considering.

Originality	★★
Sound	★
Graphics	★★★★
Addictiveness	★★★★
Value	★★★★



Author
Tansoft
Oric/Atmos 48K
£14.50

Author is a sophisticated word processing package for Oric computers.

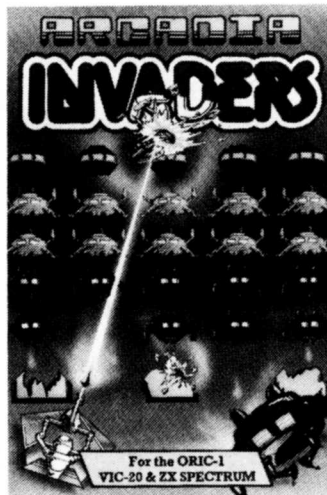
The facilities are comprehensive. The Edit function allows deletion of characters, words, sentences or paragraphs. You can recover deleted material, insert new text, overwrite, move blocks of text, mark a place for text to be inserted at a later date, find and change words or phrases, get a word count – there are all the facilities you are likely to need.

The printer commands allow you to control any printer. There are preset parameters for the MCP-40 and an 80 column printer. By altering the printer installation, you can change column widths, pen colours, print more than one copy, centre text – and much more.

The instructions will have you using the main functions of Author with no problems at all.

It certainly has more commands than you are ever likely to need. It will hold over 28,000 characters, so is fine for the business or home user. Unless you are a professional novelist, Author will do an excellent job.

Facilities	★★★★
Instructions	★★★★
Ease of use	★★★★
Value	★★



Invaders
Arcadia
Oric 48K
£5.50

This is a standard version of the classic Space Invaders game from an established software house. It has few embellishments but is good fun and well executed.

The packaging is colourful and cheerful. The program is recorded at fast and slow speeds.

The controls are three of the cursor keys for left, right and fire. There are no options and no means of changing the medium sound level.

There are three types of invaders, plus a mystery ship that scurries across the top of the screen occasionally. There are 40 invaders per screen and you have three lives.

You start with three bases and get an additional base at 2000 points. The invaders follow the usual pattern, getting very fast at the end of each wave. There is a high score feature – a ping sounds when you get a new high score.

As invaders games go, this one is pretty standard. It is a little cheaper than most and will keep you amused for quite a while.

Originality	★
Sound	★★
Graphics	★★
Addictiveness	★★★★
Value	★★★★



Galaxy 5
Durell Software
Oric 16/48K
£6.95

There aren't many programs available for the 16K Oric-1 – this Durell offering packs five games onto the one tape.

Galaxy is a variation on the Space Invaders theme, written by Philip Dierks. You have three lives. The display is simple, and the game follows the familiar pattern, including swooping aliens.

Lunar Lander is like most games of that name – land a module using engines to slow you down. Robert White is the author. LORES graphics are used quite effectively. You can also LIST this program.

Astro-War has you darting through a starfield trying to destroy enemy ships. Cursor keys control your movement.

Space-Chase is by Duncan Bett. You have to centre alien ships in a firing sight, keeping an eye on energy levels. This is the most original game of the quintet.

Finally, there's Asteroids – a simple obstacle course.

16K machine owners will find this collection of games worth getting, if only because so little is available.

Originality	★
Sound	★★
Graphic	★★
Addictiveness	★
Value	★★★★

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The Oric Interview

DR. PAUL JOHNSON

The man behind the Oric-1 and Atmos computers is Dr Paul Johnson. Kester Cranswick interviews him about recent developments.



Doctor Paul Johnson is the brains behind your Oric computer. He set up Tangerine Computer Systems in 1979, a company that produced the Tangerine Microtan 65 system. He has also been involved with Tantel and Tiger products. However, his biggest success has been, undoubtedly, the Oric-1. Now the Oric Atmos has arrived on the scene, it is high time some of his views on the Oric range were aired.

Has the Oric-1 computer been as successful as you expected it to be?

No—it's done far better than we ever dreamed it would. In our first year we have done about three times the business we expected to. We've built 200,000 Orics. We've become the top selling computer in France. There are over 50 software houses producing around 250 software packages for the Oric-1. Yes, the Oric-1 has been a tremendous success.

Were there any modifications to the Oric-1 during its lifetime?

There were a few small changes on the hardware side, though these were only to improve production techniques and have not had any effects on the end user.

With the arrival of the Atmos, is the Oric-1 now officially discontinued?

We stopped making the Oric-1 some time ago. However, there are no problems with servicing and we shall continue to support it as much as we can.

What do you see as the main differences between the Oric-1 and the Atmos?

There are two – the keyboard and the ROM.

When the Oric-1 was designed, full keyboards were too expensive to be considered as a feature. We did want to use a full keyboard, so the Oric-1 was designed with the later addition of a full keyboard in mind. Now such keyboards have come down in price, it was an obvious feature to include on the Atmos.

The new ROM is basically the same as the old, but enhanced to give more features. Much of the code is identical, though reassembled, and the systems calls have been changed too.

How will the change from VI.0 to VI.1 ROMs affect software houses and home programmers?

We let all the major software houses have details of the new ROM back in August, though they weren't told that it would be in a new computer. Many of them are now producing software compatible with both ROMs.

We are recommending 'intelligent' software packages. By that I mean that the program will test which ROM is being used and automatically go to the appropriate routines.

If routines are either totally in BASIC or totally in Machine Code, there should be no problems transferring from one machine to another. It is when there is a mixture of Basic and Machine Code that problems start to arise.

The only problem we've found is with the Basic PLOT command. As the screen C co-ordinates now run from 0 to 39, instead of 0 to 38, programmers will need to add one to the X co-ordinate in a PLOT X,Y,A command when going from old to new ROMs, and subtract one from the X co-ordinate if going from new to old ROMs.

What is the situation regarding upgrades of the Oric-1 to Atmos specifications?

We want to provide such a service, if there is a demand for it. The problem is that we've only been allocated 250,000 chips, and that's only half the number we'd really like to achieve full production for the Atmos. New machines must be our number one priority, so chips for an upgrade will be very scarce. If we know what the demand for an upgrade is likely to be, I could be more precise about our plans.

How would you like to see an upgrade done?

Ideally, we'd want to carry out a full upgrade of new ROM, keyboard and casing ourselves. However, one option might be a plug-in ROM cartridge, to give instant conversion from the old ROM to the new, but with no upgrade on the hardware.

When the Oric-1 was launched, there were complaints about the manual, about the welcome programme and about general reliability. How do you answer these criticisms?

The new Atmos manual is, I hope, above criticism. Those after a similar type of manual for the Oric-1 would be well advised to buy "The Companion to the Oric-1" by Ian Adamson, the author of the Atmos manual.

The original welcome tape problems weren't our fault. The company that did the tape duplication did a very poor job, and we lost a good deal of money through them. The Atmos welcome tapes are done by a different company, and aren't causing any problems.

What about reliability?

I'd say that the Oric Atmos is the most reliable home computer on the market at the moment. The Printed Circuit Board is the same as that on the Oric-1, and we've had the experience of making 200,000 of those. Most of the Oric-1 problems were keyboard related, so the full keyboard of the Atmos will overcome those problems. At the moment, the in-line failure rate of the Atmos is less than one per cent. That compares to a normal failure rate of around 30 per cent for most home computers on the production line. We now own the factory that assembles the Atmos, so our quality control is tighter, and every computer is tested with a cassette loaded program.

If any Atmos owners have problems with the computer, I would say that the problem is almost certainly going to be with the cassette recorder they are using, and not with the computer. We are also finding that poor cassette duplication is one of the biggest causes of loading problems.

I'd say that the Oric Atmos is the most reliable home computer on the market at the moment . . . every computer is tested with a cassette loaded program.

Do you think the price of the Atmos will fall?

No. The days of computer price wars are over. At the moment, there is too much demand for the available computers, so there's little pressure to cut prices.

How do you view the competition?

The Oric-1's main rival was the Sinclair Spectrum. With the Atmos, we have moved out of the Spectrum league, and have a machine that is streets ahead of the Spectrum, in all departments. For that, the consumer must pay a little more.

The Commodore 64 is a major competitor. As for the BBC B, Electron and Dragon micros, they are having problems with chip supply, so are becoming increasingly difficult to get hold of. I believe that with our guarantee of supply, improved specifications and the help of TV and press advertising, we're in a very strong competitive position.

You're pinning a lot on the image of the Atmos. Where did the name and colour scheme come from?

They were suggested by our advertising agency, KMP. The name is seen as the first in a group of names that could be applied to further products.

What is the likelihood of a 16K Atmos?

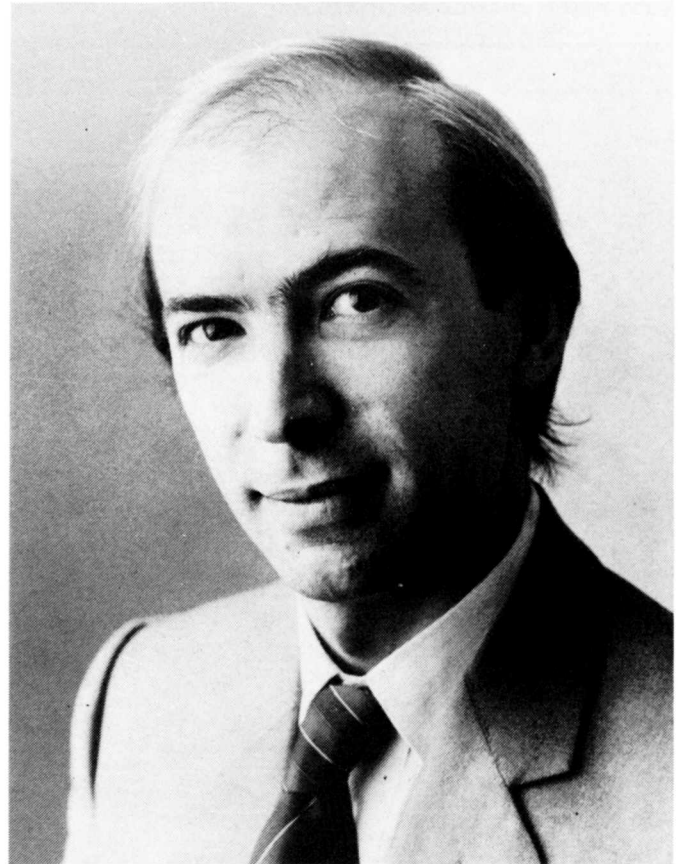
We can produce such a machine, though I believe that

the demand for it would be very small – around five per cent of total sales. We may produce a small batch at a special price, if we think they can be sold.

Disc drives were promised long ago, and have been shown in Atmos colours. When are Oric owners likely to be able to buy them?

We are making disc drives right now. However, as the first orders came from our French agent, all initial drives are being exported to France. I daresay that if readers were to go to Paris, they could probably pick up a drive unit, but the manual would be in French, and they'd need to get a voltage adaptor.

When we get enough UK orders, we'll start supplying the home market. That will probably be sometime in early Summer.



The Modem was another accessory promised, and yet to materialize. Where has it got to?

We have working prototypes here at the head office, and even an Oric linked to Prestel. However, until there is sufficient demand for the modem, it is not worth going into production. We'll start making it as soon as we feel there are enough buyers to take it.

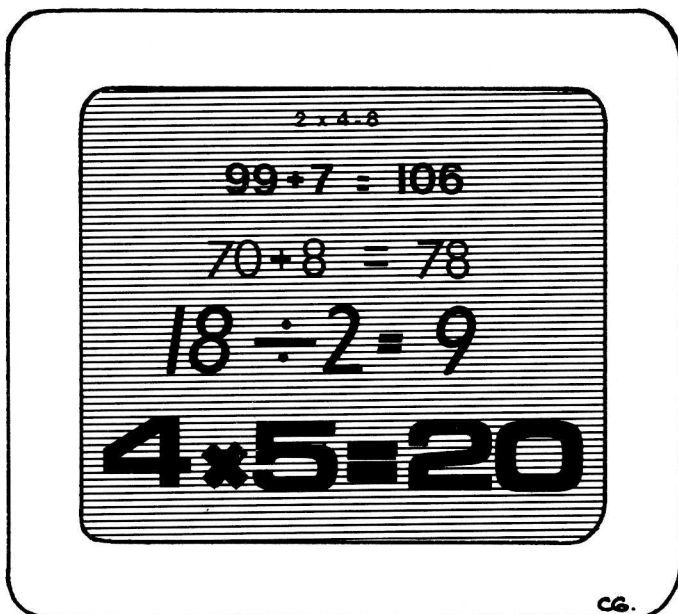
What does the more distant future hold in store for Oric?

With the Atmos, we've moved decidedly up-market, and managed to overcome the problems associated with the Oric-1. I'm firmly convinced Oric is here to stay, and can only say that we have many projects in the pipeline that will be revealed when the time is right.

Since this interview was conducted, several events have caught up with Dr Johnson's statements. An Oric-1 to Atmos upgrade has been announced, and a 16K Oric-1 could be upgraded to a 16K Atmos. The new Microdrive units are now on sale too.

ARITHMETICAL INVADERS Andrew BALDIE

Educational programs tend to be rather dull by nature. The odd sound or congratulatory message may not be



enough to hold the attention of a young student.

Andrew Baldie of Dundee sent us this program that is not only educational, but entertaining too. It is designed to test mathematical skills. The entertainment comes from a Space Invaders style presentation of the test.

At the start you are prompted to select a test for addition, subtraction, multiplication or division. You are then prompted for a difficulty level from 1 to 5. The hardest level selects numbers up to 30.

The test then starts. A skyline and starry background are drawn on the HIRES screen. 'Numerons', the mathematical questions, then start moving down the screen towards your city. By entering the right answer and pressing the return key, the numeron will be destroyed and five points added to your score.

Each round has ten numerons to destroy. At the end, correct answers are displayed, a total score given and a repeat option presented. All in all, this program is a very fun way of improving your mathematical skills.

The listing is quite straightforward. The program will easily fit a 16K machine if the POKE locations are modified. It will also run on an Atmos if PLOT commands are amended.

YAHTZEE

Yahtzee is one of those games that is well suited to computer conversion. It is a very ancient game, played with five dice.

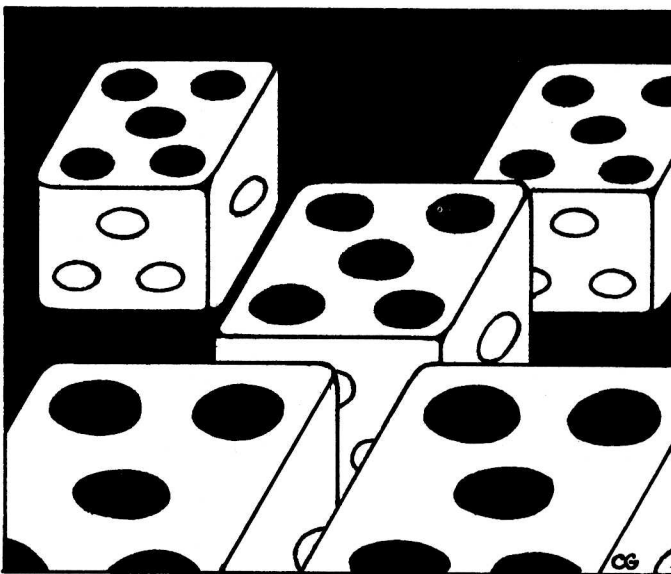
The object is to score as many points as possible. There are thirteen possible ways to score, and the idea is to get as many points in each scoring category, with a maximum of three throws of the dice at each turn. A Yahtzee is a hand of five of a kind – not an easy achievement.

The Oric version comes from a trio of Brighton-based programmers – David Bexley, R. Furmedge and B. Syares. It copes with up to four players, uses traditional rules and has a Hall of Fame. There is an instruction page too.

When RUN, instructions can be viewed. The number of players and their names are entered. The display then changes to a score card, with the scoring categories listed and an array of five 'dice' displayed. A total of three throws of any of the five is allowed, before the player is prompted to nominate an untaken score category. Once a category has been filled, it can't be taken again. A running points total is kept. At the end a winner is announced and the Hall of Fame updated.

The skill comes in choosing which category to score under and which dice to re-throw. Add to that the luck of the dice and you have an absorbing, entertaining game that will keep the family amused for hours.

David BEXLEY



The listing, though long, is simple BASIC. There are some sound commands, but the bulk is the mathematical business of throwing random numbers and totalling scores. The listing takes up 9K, but with playing, you'll need 10K or so. That means Yahtzee will run on both 48K and 16K Oric-1 machines. Atmos owners should add one to the first figure in all PLOT statements.

TAPE STORE

K. D. ALLEN

Keeping track of the contents of a music collection is just the sort of thing a computer is most useful for. This listing from Mr K. D. Allen of Benfleet, Essex, does just that, and stores the data on tape.

He has been using it to keep records of his tape collection, and from it he is able to extract information by artist, song or tape search. The program is in two parts – the workhorse bit, listed here, and the data. That you will have to enter yourself.

This program will run on 16K Oric's, if POKE addresses are modified, and with a lesser amount of data storage. As it uses a mixture of Machine Code and BASIC, it isn't suitable for the Atmos without a good deal of conversion.

To use Tape Store, enter the program as listed. Assuming it is bug-free, the first RUN will ask for data to be input from cassette. As there is no data, yet, you won't get much further.

The procedure to start a new file is to type in RUN 35. This brings up the main menu at once, and by choosing option (2), you can enter data.

Data is entered in a simple way. The prompts are for the Track title, the Artist and where the track is to be found. The last response must be a five figure number. The first two digits are the tape number (00 to 99). The next digit is the tape side (1 or 2) and the last two digits are the track number (00 to 99 again). No other form of entry will be accepted.

Remember to adopt a common means of entering data, particularly when it comes to mixing upper and

lower case. The Oric's string search facilities mean strings must match exactly down to the last space and dotted i.

After each data entry, you can choose to continue, sort (alphabetically) with return to the main menu, or to void the last record.

The main menu gives the options of listing all entries (P to pause, S to continue), entering fresh data, deleting an entry, saving data to tape and exiting the program. There is also a search facility.

The option lets you search under track, artist or tape. The correct response to the field choice prompt is lower case throughout i.e. 'artist'. When an entry is listed, pressing any key returns to the main menu.

Saving to or loading from tape will be greatly aided by a remotely controlled tape recorder.

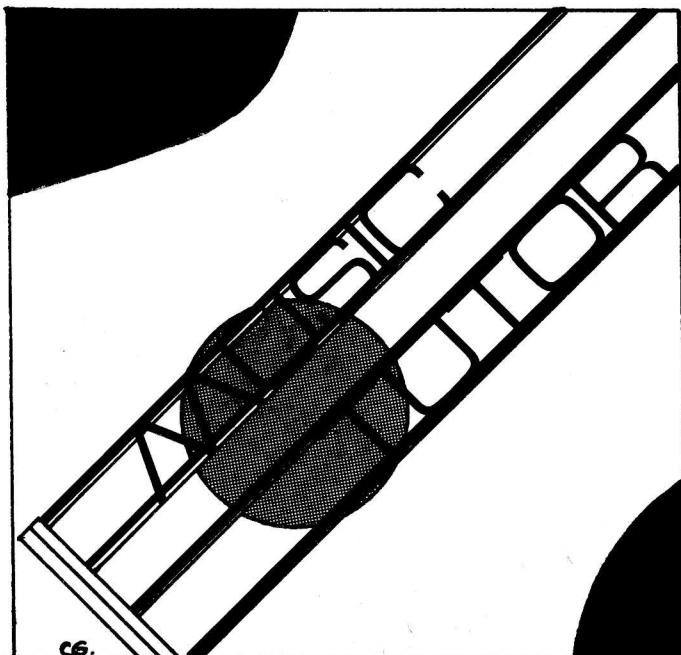
These are the variables used in Tape Store.

A\$	Track title
B\$	Artist
TST\$	Tape, Side, Track
C	Item found flag
E	Number of records
L	Various uses
Q	Used in delete routine to update E
D%+J	For sort routine

Now, with all my data on tape, where's that track by Oric Clapton!

MUSIC TUTOR

Alaster THOM



Alaster Thom is a music teacher in Northamptonshire. He has written a quintet of programs that give the Oric the role of music tutor.

The programs are designed to teach the recognition of musical notes and their position on bass and treble staves. There are two sections for the treble clef, two for the bass clef and a final section to test the student.

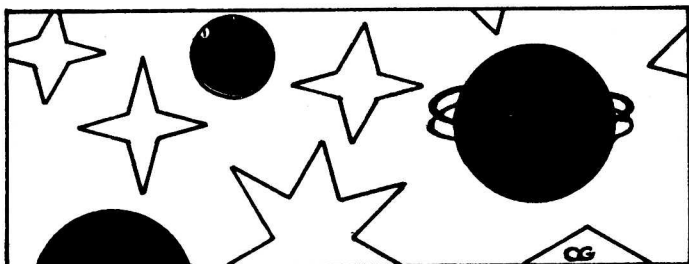
Parts one and three show you the bass or treble clef, a note on it, sound that note and ask you to identify it. If you get stuck, ask for Help.

Parts two and four do the same thing but test notes above and below the clef. Section five has you trying to guess as many notes as you can in a fixed period of time.

Atmos owners will have to amend PLOT statements. Also, to facilitate entering the programs, you'll probably be able to LIST sections of one program and amend it with CTRL A to get the next section.

STARCRUISER

Tarik MUGHAL



Remember the simple road race program on your welcome cassette. It was pretty easy, wasn't it? Starcruiser is an arcade version of that type of game, and you'll need quick reflexes to master it.

Tarik Mughal of Southall, Middlesex is the author. He writes that it is based on features of Scramble and Asteroids games. It uses a combination of BASIC and Machine Code, so though it could be adapted to the 16K Oric-1, by changing the POKE and DOKE addresses, it can't be that easily converted to the Atmos. If anyone wants to have a go at the task, let us know what changes are needed. When running, some 9.3K of memory is needed.

When RUN, there is a short delay before the animated title page appears. You are prompted for a difficulty level from one (easy?) to nine (impossible). Then the action starts.

The game screen is in several sections. You control a starcruiser that moves in the upper third of the screen. This section is scrolled horizontally past you. Your height is controlled by the up and down cursor keys.

Scrolling past are various meteorites and flying saucers. Hit them, or the sides of the play area and your one life is gone. They're the easiest things to avoid though.

Every so often, a 'space tunnel' appears, and you have to negotiate that without hitting the highly explosive sides. With some, you can go straight through, but others require lightning sharp reflexes.

At the base of the screen there is an information display. The score is updated at the exit from every space tunnel -- more frequent updating would slow the game down too much.

The highest score so far achieved is shown, and updated when necessary. You are shown the score of the last game and the game level you are on is shown too.

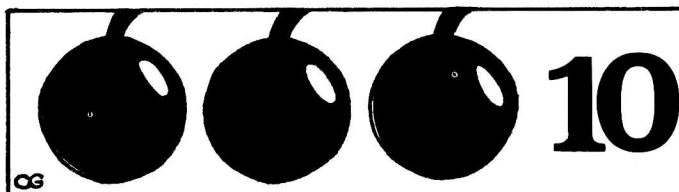
When in a space tunnel, a flashing SONAR signal appears, warning you not to make violent course corrections. A Navigation Lights signal also comes on when you are in a tunnel.

If, or when, you get to 500 points, there is another obstacle to be overcome. The scrolling action slows and a radioactive mine appears on the right of the play area. You are given a number of rockets with which to destroy it. The space bar is used to fire a rocket.

Other features of the game are a replay facility, sound effects (thankfully not too loud) and some excellent graphics. Take care with the listing, as it is long and involved, but it does show the kind of work needed to make a good arcade-style game.

SLOT MACHINE

Martin HAGSTRØM



Our pub seems to make more money out of the slot machines in the corner than it does from selling drinks. The slot machine is a fixture these days, and if you can't resist the lure of spinning reels and flashing Hold lights, this listing is for you.

If comes from Martin Hagstrøm of Denmark and takes up 5.6K of memory when running. It will fit a 16K machine, if you change the value of Z\$ in lines 8992 and 9100 to #3400+. . . Atmos owners will have to add one to every X co-ordinate in a PLOT command.

When RUN, a slot machine, the ORIC-1 SLOT, is drawn on the TEXT screen. It has three reels, displaying coloured symbols. A sheet of scoring combinations is also shown, and the number of coins remaining. You start with 100.

Reels are spun by pressing the space bar. If a hold feature is given, hold any of the reels by pressing the 1, 2 or 3 keys. A hold is cancelled by pressing the appropriate key again.

Sound effects accompany any win, and the coin total is updated at each spin.

The odds are in favour of the player, so it is unlikely you'll lose your shirt. There is no check for a negative

coin total though, and the game will only end when the 'S' key is pressed.

The listing is in BASIC, with copious REMs to explain how it works.

Line 2800-2870 'spin' each reel six times. Lines 8900-8930 fill each reel with the symbols. Changing these sections could alter the odds of this machine.

To see the re-defined characters, LIST 8500-8600 after RUNning the program.

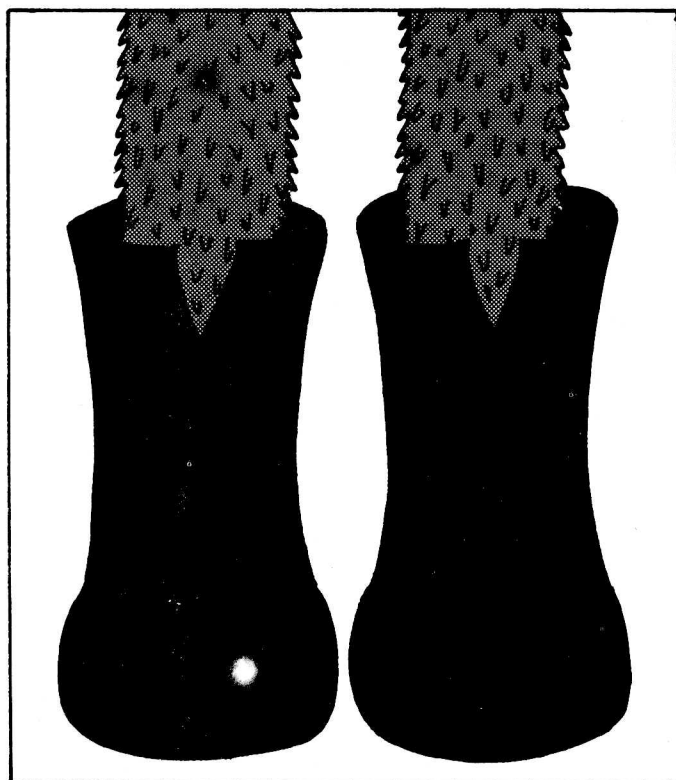
The variables are as follows.

P	Prize
S	Number of coins
H	Used to flash winning combination
A\$(a,b)	Symbol array
HOLD	Hold feature enable flag
H1,H2,H3	Reel held flags

PUSS IN BOOTS

S. W. LUCAS

So many adventure games, it seems, plunge into nightmare environments where all kinds of foul beasts live, and you can die in many a tortuous way. This adventure, from regular contributor, S. W. Lucas of Cheadle Hulme, Cheshire, is based on the fairytale, Puss in Boots.



It is written for a 48K Oric-1, and when running, takes up 14.4K of memory. It should just fit 16K Orics. And, as Machine Code is not used, it will run on an Atmos if you add one to X coordinates in PLOT statements.

The adventure is text only, with some sound. It follows the original seventeenth century story closely, so if you get stuck, read the book.

The scenario is that you are the youngest of three miller's sons. At his death, all you were left was the cat. This cat was no ordinary cat though, for it could speak. You and the cat then set out on an adventure that could end with fame and fortune for you both.

Your Oric takes the role of the cat, and, as cats do, has a limited vocabulary. It is addressed in one or two word sentences, consisting of a verb and a noun, where necessary. In addition, North, South, East, West, Up and Down commands move you in the relevant direction.

The vocabulary is listed here. Only the first three letters of a word need be entered for Puss to understand. If your syntax is wrong, or the word is not in the vocabulary, an appropriate message will be displayed.

Some of the lines in the listing are very long, and you'll need to abbreviate the PRINT command to ? You may also need to omit the space between the line number and the first letter of the line. It will be there when you LIST, of course.

Should you get stuck, you might request HELP from Puss, who may have some advice. If you get really stuck, we have a list of hints, and we'll send them to you on receipt of a stamped self addressed envelope. Send it to *Oric Owner*, marked 'Puss in Boots'.

Vocabulary - Directions

North
South
East
West
UP
DOWN
IN
OUT

Verbs

ASK	GO	RUB
ATTack	GRAB	RUN
BANquet	HIDE	SAIL
BUY	JUMP	SAY
CLimb	KILL	SEArch
CRY	KISS	SHOOT
DANCE	LEAVE	SWear
DESTroy	LOOK	SWEEP
DINE	LUNCH	SWIm
DIVE	OPEN	TAKE
DRInk	PHONE	TALK
DROP	PRAY	TRY
EAT	PULL	UNLock
ENTertain	PUSH	WAIT
EXAmine	PUT	WASH
FEED	READ	WEAR
GET	RIDE	
GIVE	ROW	

Special verbs

HELp
INVentory
SCORe

Nouns etc.

ASSistant	FOOD	PALace
BAG	GUARD	PARtridge
BOAT	KEY	RABbit
BOOTS	KNIFE	RAT
BUSHes	LEAVes	RING
CLOthes	LETtuce	SHOP
COIns	OGRe	WEDding
EVIL	PAIR	

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What the papers say

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Personal Computer World

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Your Computer

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Home Computer Weekly

Tansoft Ltd. Unit 1,
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For example the Italian for 'cat' is 'gatto'. You will then be asked to imagine a 'cat eating a large gâteau'. At a later stage you will be asked what the Italian is for 'cat' and you will recall the image of the cat and the gâteau.

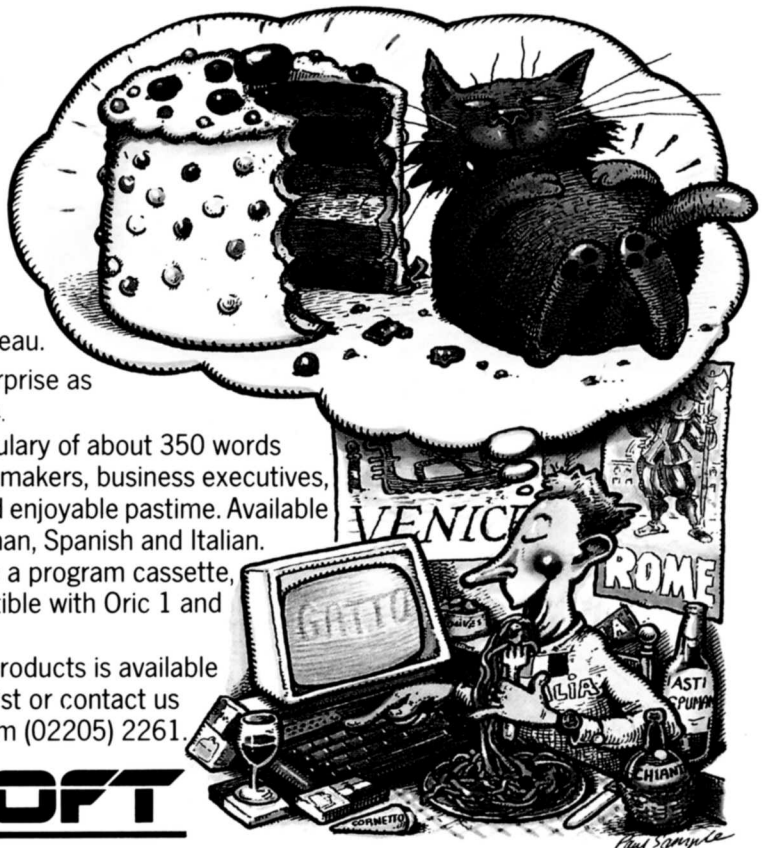
"You then sit back in your chair with pleasure and surprise as you realise the system does work!". *Your Computer*, April 1984.

It is very likely that in 10 hours you will have a vocabulary of about 350 words and a basic grammar. The courses are ideal for holiday makers, business executives, children or anybody who is looking for a constructive and enjoyable pastime. Available at **£12.95 each** in French, German, Spanish and Italian.

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Our range of software products is available from your local Oric stockist or contact us direct. Telephone Teversham (02205) 2261.

TANSOFT



ORIC Software

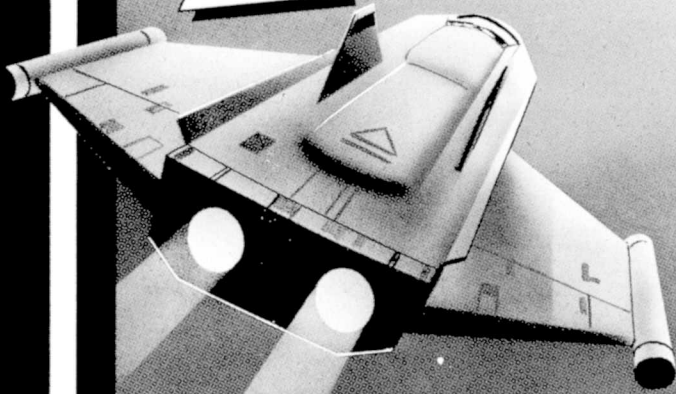
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Software Listings

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HOW TO SUBMIT PROGRAMS

We are always delighted to see your programs for possible publication in Oric Owner. If the program is less than 50 lines long, we will probably consider it a Quickie.

As we are kept busy putting the magazine together, we don't have the time to type in long programs. If you are sending in a long program then, please send it on cassette. To aid correct loading, we would advise CSAVEing two listings, one at the slow data transfer speed.

We have our own printers, to give a printout suitable for use in the magazine. It is therefore not essential that you send a listing for BASIC programs. We must have listings for Machine Code programs though.

If you can include any details on special routines in your programs, or a brief summary of how they run, it would be helpful.

Finally, unless you include a stamped, self addressed envelope, we cannot return any submitted programs, due to the number we receive each week. Make sure you have a copy of your program at home, or enclose a s.a.e. if you want the cassette returned.

ARITHMETIC INVADERS

```

10 DATA 0,0,18,12,12,18,0,0
20 DATA 0,8,0,28,0,8,0,0
30 FORA=46416 TO46423:READB:POKEA,B:N
EXT
40 FORA=46456 TO46463:READB:POKEA,B:N
EXT
50 REM <<< INSTRUCTION >>>
52 TEXT:CLS:PAPER6:INK0
54 PRINT:PRINT"      ARITHMETIC INVADE
RS"
56 PRINT:PRINT:PRINT" YOUR MISSION IS
TO STOP THE NUMERONS"
58 PRINT:PRINT"FROM INVADING THE EART
H.TO DO THIS"
60 PRINT:PRINT"YOU MUST INPUT THE COR
RECT ANSWER TO"
62 PRINT:PRINT"THE NUMERON'S PROBLEM.
"
63 PRINT:PRINT:PRINT" AFTER INPUTING
YOUR ANSWER PRESS"
64 PRINT:PRINT"      'RETURN' "
69 WAIT 200:PLOT 10,23,"HIT ANY KEY"
70 GET A$
100 REM <<< MASTER LOOP >>>
110 GOSUB 1000 'REM INIT VARIABLES
120 GOSUB 2000 'REM SET UP SCREEN
130 FOR N=1 TO 10
140 GOSUB 2800+(SN*200)'<< SET SUM >>
145 X=INT(RND(1)*150)+40:Y=20:GOSUB 6
000:TR=0
150 GOSUB 4000 '<< SECONDARY LOOP >>
160 NEXTN
170 GOTO 8000 '<<< RESULTS >>>
1000 REM <<< INIT VARIABLES >>>
1010 TEXT:PAPER6:INK0:CLS
1020 PRINT:PRINT:PRINT:PRINT" YOU HAV
E THE FOLLOWING CHOICE :="
1030 PRINT:PRINT:PRINT" 1) ADDITION (
+)
1032 PRINT:PRINT" 2) SUBTRACTION (-)
1034 PRINT:PRINT" 3) MULTIPLICATION (
*)
1036 PRINT:PRINT" 4) DIVISION (/)
1038 PRINT:PRINT:PRINT" PRESS THE A
PPROPRIATE KEY."
1040 GET SN$:SN=VAL(SN$)
1050 IF SN=0 OR SN>4 THEN ZAP:GOTO104
0
1060 CLS:PRINT:PRINT:PRINT"      IN
PUT DIFFICULTY (1-5)."
1065 PRINT"      (1=EASY,5=HARD)"
1070 GET DF$:DF=VAL(DF$)
1075 IF DF=0 OR DF>5 THEN ZAP:GOTO107
0
1100 RETURN
2000 REM <<< SET UP SCREEN >>>

```

```

2010 PAPER0:INK7:HIRE$ :POKE618,2
2020 CURSET 0,190,1:DRAW 10,0,1:DRAW
5,-20,1:DRAW 2,-2,1:DRAW5,0,1:DRAW2,2,
1
2030 DRAW 5,15,1:DRAW 20,0,1:DRAW 0,-
5,1:DRAW 10,0,1:DRAW 0,5,1:DRAW 3,0,1
2040 DRAW 0,-15,1:DRAW3,0,1:DRAW0,10,
1:DRAW 10,0,1:DRAW0,5,1:DRAW 5,0,1
2050 DRAW0,-10,1:DRAW 5,5,1:DRAW0,-5,
1:DRAW5,5,1:DRAW0,-5,1:DRAW 5,5,1
2060 DRAW0,-5,1:DRAW 3,0,1:DRAW 0,-5,
1:DRAW 2,0,1:DRAW0,5,1:DRAW 3,0,1
2070 DRAW 0,-5,1:DRAW2,0,1:DRAW 0,5,1
:DRAW 5,0,1:DRAW 0,10,1:DRAW 5,0,1
2080 DRAW 0,10,1:DRAW 5,0,1:DRAW 0,-5
,1:DRAW2,-2,1:DRAW2,2,1:DRAW 0,5,1
2090 DRAW 5,0,1:DRAW 5,-5,1:DRAW3,0,1
:DRAW0,-10,1:DRAW 4,0,1:DRAW 0,10,1
2100 DRAW 3,0,1:DRAW 0,-4,1:DRAW3,0,1
:DRAW0,-6,1:DRAW5,0,1:DRAW0,-5,1
2110 DRAW1,0,1:DRAW0,5,1:DRAW10,-2,1:
DRAW 2,2,1:DRAW3,0,1:DRAW0,-5,1
2120 DRAW 3,0,1:DRAW 0,10,1:DRAW 5,0,
1:DRAW 0,-5,1:DRAW3,-3,1:DRAW 5,0,1
2130 DRAW 3,3,1:DRAW 0,5,1:DRAW2,0,1:
DRAW 0,-15,1:DRAW4,0,1:DRAW0,15,1
2140 DRAW 15,0,1:DRAW 5,-15,1:DRAW2,-
2,1:DRAW5,0,1:DRAW2,2,1:DRAW5,15,1
2150 DRAW 12,0,1
2160 FOR I=10 TO 160 STEP2
2170 CURSET INT(RND(1)*220)+10,I,1
2180 NEXT
2190 X=5:Y=2:SM$="SCORE =":GOSUB 6000
2200 RETURN
3000 REM<<< ADDITION >>>
3010 FOR I=1 TO 2
3020 A(I)=INT(RND(1)*(DF+5)*2):A$=STR
$(A(I)):A$(I)=MID$(A$,2)
3030 NEXT
3040 SM$=A$(1)+"+"+A$(2)
3050 AN=A(1)+A(2)
3060 IF AN=0 THEN 3010
3100 RETURN
3200 REM <<< SUBTRACTION >>>
3210 FOR I=1 TO 2
3220 A(I)=INT(RND(1)*(DF+6)*2):A$=STR
$(A(I)):A$(I)=MID$(A$,2)
3230 NEXT
3240 AN=A(1)-A(2):IF AN<1 THEN 3210
3250 SM$=A$(1)+"-"+A$(2)
3300 RETURN
3400 REM <<< MULTIPLICATION >>>
3410 FOR I=1 TO 2
3420 A(I)=INT(RND(1)*(DF+5))+1:A$=STR
$(A(I)):A$(I)=MID$(A$,2)
3430 NEXT

```

ARITHMETIC INVADERS

```

3440 AN=A(1)*A(2)
3450 SM$=A$(1)+"*"+A$(2)
3500 RETURN
3600 REM <<< DIVISION >>>
3610 A(1)=INT(RND(1)*(DF+6)*3+1):A$=S
TR$(A(1)):A$(1)=MID$(A$,2)
3620 A(2)=INT(RND(1)*(DF+3)*2+1):A$=S
TR$(A(2)):A$(2)=MID$(A$,2)
3640 AN=A(1)/A(2):IF AN<>ABS(INT(AN))
THEN 3610
3645 IF AN=1 THEN 3610
3650 SM$=A$(1)+"/"+A$(2)
3700 RETURN
4000 REM <<< SECONDARY LOOP >>>
4005 REPEAT
4010 K$=KEY$
4020 IF K$=CHR$(13) THEN GOSUB 5000
4030 IF VAL(K$)=0 AND K$<>"0" THEN 40
50
4040 IN$=IN$+K$
4050 GOSUB 6000
4060 X=X+(INT(RND(1)*5)-2)
4070 IF X<10 THEN X=10
4080 IF X>200 THEN X=200
4090 Y=Y+2
4100 GOSUB 6000
4110 UNTIL Y>170
4120 B$(N)=SM$:B(N)=(AN)
4125 CLS:PRINT:PRINT" IT'S TOO LAT
E !!!"
4130 ZAP:ZAP:ZAP:FOR I=7 TO 0 STEP-1:P
APERI:WAIT10:EXPLODE:NEXT
4140 GOSUB 6000:WAIT100
4150 CLS:PRINT:PRINT" THE ANSWER I
S ";AN
4160 WAIT 500
4170 IF N<10 THEN CLS:PRINT:PRINT" H
ERE COMES ANOTHER !"
4200 RETURN
5000 REM <<< CHECK ANSWER >>>
5010 IF VAL(IN$)=AN THEN 5100
5020 IN$="":K$="":TR=TR+1
5030 MUSIC 1,1,6,0:PLAY7,0,1,900:WAIT
100
5040 RETURN
5100 REM <<< CORRECT >>>
5105 GOSUB 6000
5110 IN$="":K$="":SM$="#@#@#"
5120 FOR J=1 TO 0 STEP-1
5130 CURSET 30,170,3:DRAW X-20,Y-163,
J
5140 CURSET 210,170,3:DRAW X-200,Y-163
,J
5150 GOSUB 6000
5160 IF J=1 THEN EXPLODE
5170 NEXT
5180 IF TR>9 THEN PRINT" IT TOOK YOU
LONG ENOUGH !!!":WAIT100:GOTO 5300
5190 IF TR>4 THEN TR=4
5195 IF SC=0 THEN 5210
5200 SM$=MID$(STR$(SC),2):X=50:Y=2 :G
OSUB 6000
5210 SC=SC+(5-TR)
5220 SM$=MID$(STR$(SC),2):X=50:Y=2 :G
OSUB 6000
5230 CLS:PRINT" CORRECT"
5240 PRINT:PRINT" WELL DONE !"
:WAIT 200
5300 IF N<10 THEN CLS:PRINT:PRINT" H
ERE COMES ANOTHER !":WAIT100
5320 POP:PULL:RETURN
6000 REM <<< PRINT ROUTINE >>>
6010 CURSET X,Y,3
6020 FOR I=1 TO LEN(SM$)
6030 CHAR ASC(MID$(SM$,I,1)),0,2
6040 CURMOV 6,0,3
6050 NEXT
6100 RETURN
8000 REM <<< RESULTS >>>
8010 WAIT 200:TEXT:CLS
8020 PRINT:PRINT" RESULTS
";
8030 WAIT200:PRINT:PRINT:PRINT
8040 FOR I=1 TO 10
8050 IF B(I)<>0 THEN PRINT I;" "
:B$(I);" = ";B(I):T=1
8060 NEXT:PRINT:PRINT
8070 IF T=1 THEN 8100
8080 PRINT:PRINT:PRINT:PRINT"
WELL DONE !!!"
8090 PRINT:PRINT" YOU GOT THEM A
LL CORRECT."
8100 PRINT:PRINT" YOU SCORED ";S
C;" OUT OF 50."
8110 WAIT 200:PRINT:PRINT"
THAT IS ";2*SC;"%."
8120 WAIT200:PRINT:PRINT:PRINT" DO
YOU WISH TO TRY SOME MORE (Y\N)?"
8130 GET A$:IF A$="Y" THEN CLEAR:GOTO
100
8140 IF A$<>"N" THEN 8130
8150 CLS:PLOT 16,12,"BYE."
8160 GOTO 8160
8500 RETURN

```


YAHTZEE

```

10 REM *****
20 REM *
30 REM *      Y A H T Z E E      *
40 REM *
50 REM *      By      *
60 REM *      D.Bexley, B.Sayers *
70 REM *      & R.Furmedge      *
80 REM *
90 REM *****
100 TEXT
110 FORI=48000TO48039
120 POKEI,32:NEXTI
130 PAPER5:INK7
140 POKE 618,2
150 GOSUB 2380
160 GOSUB 2450
170 PRINT:PRINT:PRINT:PRINT:PRINT "
Do you want instructions? (Y/N)"
180 GET Z$
190 IF Z$="Y" THEN GOSUB 2700
200 CLS:PAPER1:INK7
210 LF$=""
220 FORI=1TO20:LF$=LF$+CHR$(4):NEXT
230 POKE 618,3
240 CLS:PRINT"Number of players (1-4)
";
250 INPUTP:IFP>0ANDP<5GOTO270
260 PRINT"Error (max 4 players) ":GOS
UB1620:WAIT100:GOTO240
270 IF GM=1 THEN 290
280 DIM S(14,4)
290 FORI=1TOP:FORJ=1TO13:S(J,I)=-1:NE
XTJ,I
300 FORI=1TOP:S(0,I)=0:S(14,I)=0:SW(I
)=0:NEXT
310 FORI=1TOP:PRINT:PRINT      :PRINT"N
ame of player ";I;" ";:INPUTN$(I)
320 IF LEN(N$(I))>8THENPRINT"Too long
(max 8 characters)":GOTO 340
330 GOTO 380
340 GOSUB 1620:WAIT 100:I=I-1
350 PRINTCHR$(11);CHR$(11);CHR$(11)
360 PRINT"
"
370 PRINTCHR$(11);CHR$(11);CHR$(11);C
HR$(11);CHR$(11)
380 NEXTI
390 POKE 618,2
400 GOSUB 1700
410 FORI=1TO13:FORJ=1TOP
420 PLOT23,24,"
430 PLOT23,23,"
440 PR$= N$(J)+"'s turn"
450 PLOT1,1,"
460 PLOT23,23,PR$:PLOT 10,1,N$(J)
470 PLOT 20+J*4,1,"!" :PLOT4,1,12:PL
OT5,1,7
480 FORS1=1TO200:ST$=KEY$ :NEXT
490 PN=INT(RND(1)*6)+1:GOSUB2060
500 PN=INT(RND(1)*6)+1:GOSUB2080
510 PN=INT(RND(1)*6)+1:GOSUB2100
520 PN=INT(RND(1)*6)+1:GOSUB2120
530 PN=INT(RND(1)*6)+1:GOSUB2140
540 FORL=1TO2
550 IF L=1 THEN PR$="1st throw.. "
ELSE PR$="Last throw... "
560 PLOT23,23,PR$
570 GOSUB 960
580 IFI$=""GOTO 660
590 PLOT23,24,"
600 FORM=1TOLEN(I$):IN=ASC(MID$(I$,M,
1))
610 IF IN>64ANDIN<70THENIN=70-IN:GOTO6
30
620 GOSUB1600:GOTO560
630 PN=INT(RND(1)*6)+1
640 ONINGOSUB2140,2120,2100,2080,2060
650 NEXTM,L
660 I$="" :PLOT23,23,"Score section"
670 GOSUB 960
680 W=VAL(I$):IFW<10RW>13THEN GOSUB 1
600:GOTO 660
690 IFS(W,J)<>-1THENGOSUB1600:GOTO660
700 IFW<7THENGOSUB2020:GOTO720
710 GOTO 820
720 S(W,J)=PS:S(14,J)=S(14,J)+PS:S(0,
J)=S(0,J)+PS
730 PP=W
740 GOSUB 880
750 W=14
760 PP=8:GOSUB 880
770 IF(S(14,J)>62)AND(SW(J)=0)THENS(0
,J)=S(0,J)+35:SW(J)=1:GOSUB 3000
780 PP=19:W=0:GOSUB 880
790 NEXTJ,I
800 WAIT400
810 GOTO 2200
820 ON14-WGOSUB1080,1090,1240,1270,13
70,1480,1540
830 S(W,J)=PS:S(0,J)=S(0,J)+PS
840 PP=W+4
850 GOSUB 880
860 W=0:PP=19:GOSUB 880
870 GOTO 790
880 P$=""
890 IFS(W,J)<10THENP$=" " :GOTO910
900 IFS(W,J)<100THENP$=" "
910 P$=P$+RIGHT$(STR$(S(W,J)),LEN(STR
$(S(W,J)))-1)
920 GOSUB 2920

```

YAHTZEE

```

930 PLOT19+(4*J),PP+2,P$
940 RETURN
950 PLOT20+(4*J),11,"35":GOSUB 3000
960 PLOT24,24,"?"
970 I$="":LL=24
980 GETJ$
990 IFJ$=""THENGOTO 980
1000 IFASC(J$)=13 GOTO 1070
1010 IFASC(J$)>47ANDASC(J$)<70GOTO103
0
1020 GOSUB1600:GOTO960
1030 I$=I$+J$
1040 IF LEN(I$)>10 THEN GOSUB1600 :GO
TO 960
1050 LL=LL+1:PLOTLL,24,J$
1060 GOTO 980
1070 RETURN
1080 PS=0:FORL=1TO5:PS=PS+D(L):NEXTL:
RETURN
1090 GOSUB1540:IFSW<5GOTO1170
1100 PS=50:PLAY 3,0,0,0
1110 FOR X1=1 TO 6
1120 PLOT5,18," "
1130 GOSUB 1190
1140 PLOT5,18,"Y A H T Z E E"
1150 GOSUB1190:NEXT X1
1160 PLAY 0,0,0,0:GOTO 1180
1170 PS=0
1180 RETURN
1190 FOR I9=115 TO 100 STEP -1
1200 SOUND 1,I9,8
1210 SOUND 2,225-I9,8
1220 NEXT I9
1230 RETURN
1240 GOSUB1270:IFSW>3THENPS=40:GOTO12
60
1250 PS=0
1260 RETURN
1270 PS=0:SW=0:FORL=1TO5:FORL1=1TO4
1280 IFD(L1)<D(L1+1)THENTE=D(L1):D(L1
)=D(L1+1):D(L1+1)=TE
1290 NEXTL1,L:IFD(1)=D(2)+1THENSW=SW+
1
1300 IFD(2)=D(3)+1THENSW=SW+1
1310 IFD(2)=D(3)+2THENSW=0
1320 IFD(3)=D(4)+1THENSW=SW+1
1330 IFD(3)=D(4)+2THENSW=0
1340 IFD(4)=D(5)+1THENSW=SW+1
1350 IFSW>2THENPS=30
1360 RETURN
1370 FORL1=1TO6:SW=0:FORL=1TO5:IFD(L)
=L1THENSW=SW+1
1380 NEXTL:IFSW=3GOTO1410
1390 IFSW=5GOTO1460
1400 NEXTL1:GOTO1450
1410 SW=0:FORL=1TO5:IFD(L)=L1GOTO1430
1420 SW=SW+(D(L)*D(L))
1430 NEXTL
1440 IFSW=20RSW=80RSW=180RSW=320RSW=5
00RSW=72GOTO1460
1450 PS=0:GOTO1470
1460 PS=25
1470 RETURN
1480 FORL=1TO6
1490 SW=0:PS=0:FORL1=1TO5:IFD(L1)=LTH
ENSW=SW+1
1500 NEXTL1
1510 IFSW>3THENFORL1=1TO5:PS=PS+D(L1)
:NEXTL1:GOTO1530
1520 NEXTL
1530 RETURN
1540 FORL=1TO6
1550 SW=0:PS=0:FORL1=1TO5:IFD(L1)=LTH
ENSW=SW+1
1560 NEXTL1
1570 IFSW>2THENFORL1=1TO5:PS=PS+D(L1)
:NEXTL1:GOTO1590
1580 NEXTL
1590 RETURN
1600 PLOT23,24," INVALID "
1610 GOSUB 1620:RETURN
1620 PLAY 1,0,0,0
1630 MUSIC 1,2,5,10:WAIT 25
1640 PLAY 0,0,0,0:WAIT 25
1650 PLAY 1,0,0,0
1660 MUSIC 1,1,5,10:WAIT 50
1670 PLAY 0,0,0,0
1680 PLOT23,24," "
1690 RETURN
1700 REM ** HIDE SCREEN **
1710 INK 1
1720 CLS
1730 PRINT:PRINT
1740 PRINT"#####!#1#!
#2#!#3#!#4#{";
1750 PRINT"@ 1@All 1's count 1's@ @
@ @ @";
1760 PRINT"@ 2@All 2's count 2's@ @
@ @ @";
1770 PRINT"@ 3@All 3's count 3's@ @
@ @ @";
1780 PRINT"@ 4@All 4's count 4's@ @
@ @ @";
1790 PRINT"@ 5@All 5's count 5's@ @
@ @ @";
1800 PRINT"@ 6@All 6's count 6's@ @
@ @ @";
1810 PRINT"z###&#####\###\
###\###\###q";
1820 PRINT"@ S U B T O T A L @ @
@ @ @";
1830 PRINT"@ if > than 62 35@ @

```

YAHTZEE

```

@ @ @ ;
1840 PRINT "z##!#####
\###\###\###\###q";
1850 PRINT"@ 7@Three 'a kind TOT@ @
@ @ @";
1860 PRINT"@ 8@Four 'a kind TOT@ @
@ @ @";
1870 PRINT"@ 9@Full House 25@ @
@ @ @";
1880 PRINT"@10@Four straight 30@ @
@ \@ @";
1890 PRINT"@11@Five straight 40@ @
@ @ @";
1900 PRINT"@12@Y A H T Z E E 50@ @
@ @ @";
1910 PRINT"@13@Chance TOT@ @
@ @ @";
1920 PRINT "z##&#####
\###\###\###\###q";
1930 PRINT"@ A B C D E @ @
@ @ @";
1940 PRINT"@ 1#( 1#( 1#( 1#( 1#(z###&
###&###&###q";
1950 PRINT "@ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @
@";
1960 PRINT"@ ^#) ^#) ^#) ^#) ^#)@
@";
1970 PRINT"^#####&###
#####)" ;
1980 INK 3
1990 PLOT3,21,7:PLOT21,21,3
2000 GOSUB 3900
2010 RETURN
2020 SW=0:FORL1=1TO5
2030 IFD(L1)=WTHENSW=SW+D(L1)
2040 NEXTL1
2050 PS=SW:RETURN
2060 D(1)=PN:GOSUB 2160
2070 PLOT4,23,RIGHT$(STR$(D(1)),1):RE
TURN
2080 D(2)=PN:GOSUB 2160
2090 PLOT8,23,RIGHT$(STR$(D(2)),1):RE
TURN
2100 D(3)=PN:GOSUB 2160
2110 PLOT12,23,RIGHT$(STR$(D(3)),1):R
ETURN
2120 D(4)=PN:GOSUB 2160
2130 PLOT16,23,RIGHT$(STR$(D(4)),1):R
ETURN
2140 D(5)=PN:GOSUB 2160
2150 PLOT20,23,RIGHT$(STR$(D(5)),1):R
ETURN
2160 PLAY1,0,0,0
2170 SOUND1,300/PN,10
2180 PLAY0,0,0,0
2190 RETURN

```

```

2200 REM SCORE PRINT
2210 IFP>1THEN GOSUB 3110
2220 GOSUB 3280
2230 PLOT4,26,"Do you want another ga
me? (Y/N)"
2240 PLOT2,26,19 :PLOT1,26,0 :PLOT36,
26,20
2250 GETA$
2260 IF A$="N" THEN 2300
2270 IF A$="Y" THEN GM=1:RESTORE:GOTO
2290
2280 GOTO 2250
2290 FOR I9=1 TO 109:READZ$:NEXTI9:GO
TO 200
2300 FORI=48000 TO 48039
2310 POKEI,32:WAIT8
2320 NEXT I
2330 POKE 618,3
2340 CLS:END
2350 TE=S(0,J):TE$=N$(J):S(0,J)=S(0,J
+1):N$(J)=N$(J+1)
2360 S(0,J+1)=TE:N$(J+1)=TE$
2370 RETURN
2380 CLS
2390 PRINT:PRINT:PRINT:PRINT:PRINT:PR
INT:PRINT
2400 PRINT" ";CHR$(4);CH
R$(27);"NYAHTZEE"
2410 PRINTCHR$(4)
2420 PRINT:PRINT:PRINT
2430 PRINTSPC(5)"A BSF SOFTWARE PRODU
CTION"
2440 RETURN
2450 REM REDEFINE CHARACTERS
2460 READ NUM
2470 FOR A=1 TO NUM
2480 READ CHR
2490 FOR I=0 TO 7
2500 READ PK
2510 POKE46080+(CHR*8)+I,PK
2520 NEXT I
2530 NEXT A
2540 RETURN
2550 REM DATA FOR CHAR REDEF
2560 DATA 12
2570 DATA 35,0,0,0,63,0,0,0,0
2580 DATA38,8,8,8,63,0,0,0,0
2590 DATA 95,0,0,0,15,8,8,8,8
2600 DATA 94,8,8,8,15,0,0,0,0
2610 DATA123,0,0,0,56,8,8,8,8
2620 DATA125,8,8,8,56,0,0,0,0
2630 DATA113,8,8,8,56,8,8,8,8
2640 DATA 64, 8, 8, 8, 8, 8, 8, 8, 8
2650 DATA122,8,8,8,15,8,8,8,8
2660 DATA 92, 8, 8, 8,63, 8, 8, 8, 8
2670 DATA124,0,0,0,63,8,8,8,8

```


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```

2680 DATA33,8,8,8,8,42,28,8,0
2690 REM END OF CHAR REDEF DATA
2700 REM INSTRUCTIONS
2710 CLS
2720 PAPER2:INK0:PRINT
2730 PRINT"      The object of the gam
e is to ":PRINT
2740 PRINT"score as many points as po
ssible.":PRINT
2750 PRINT"You have two throws at cha
nging ":PRINT
2760 PRINT"any combination of the fiv
e die (A-E). "
2770 PRINT"If you do not want to thro
w any dice,":PRINT
2780 PRINT"then press the RETURN key.
":PRINT
2790 PRINT"      You then have to c
hoose a":PRINT
2800 PRINT"category to score in (1-13
).":PRINT
2810 PRINT"A YAHTZEE is five of a kin
d,":PRINT
2820 PRINT"and a bonus of 35 can be s
cored":PRINT
2830 PRINT"if your sub-total is great
er than 62.":PRINT
2840 PLOT10,24,"PRESS A KEY TO PLAY"
2850 PLOT06,24,07
2860 PLOT07,24,12
2870 PLOT08,24,17
2880 PLOT31,24,18
2890 GET Z$
2900 RETURN
2910 REM ** SOUND WHEN SCORES **
2920 REM ** INPUT ON SCREEN **
2930 IF PP=8 THEN S1=3:S2=8:GOTO 2950
2940 IF PP= 19 THEN S1=3:S2=1 ELSE S
1=4:S2=1
2950 PLAY 1,0,0,0
2960 MUSIC 1,S1,S2,10
2970 WAIT 7
2980 PLAY 0,0,0,0
2990 RETURN
3000 REM **SOUND WHEN SCORE >62 **
3010 FOR S2=1 TO 6
3020 IF S2/2=INT(S2/2) THEN ST$="35"
ELSE ST$=" "
3030 PLOT20+(4*J),11,ST$
3040 PLAY 1,0,0,0
3050 FOR S1=145 TO 120 STEP -1
3060 SOUND 1,S1,10
3070 NEXT S1
3080 NEXT S2
3090 PLAY0,0,0,0
3100 RETURN
3110 REM ** SORT ROUTINE **
3120 S1=P-1
3130 REPEAT
3140 FORI9=1TOS1
3150 IF S(0,I9)> S(0,I9+1)THEN 3200
3160 IF S(0,I9)= S(0,I9+1)THEN 3180
3170 GOSUB 3240:GOTO 3200
3180 IFN$(I9)<=N$(I9+1)THEN 3200
3190 GOSUB 3240
3200 NEXTI9
3210 S1=S1-1
3220 UNTIL S1=0
3230 RETURN
3240 REM SWAP ROUTINE
3250 T9$=N$(I9):N$(I9)=N$(I9+1):N$(I9
+1)=T9$
3260 T9= S(0,I9): S(0,I9)= S(0,I9+1):
S(0,I9+1)=T9
3270 RETURN
3280 REMDOUBLE HEIGHT CHARS
3290 CLS:PAPER6:INK6
3300 PRINTCHR$(4):PRINTCHR$(11)
3310 IFP>1THEN 3380
3320 PRINTSPC(11)"Well done "N$(1)
3330 PRINT:PRINT:PRINT:PRINTSPC(11)"Y
ou scored "S(0,1)
3340 FORY9=0T026:PLOT1,Y9,10:NEXTY9
3350 INK4
3360 FORI9=1 TO 4 :READZ$ :NEXTI9
3370 WAIT250:GOTO 3520
3380 REM**POSITIONS OF PLAYERS**
3390 PRINTSPC(8) "The positions were:
"
3400 PRINT:PRINT:PRINT:PRINT:PRINT
3410 FORI9=1TOP
3420 READZ$
3430 PRINTSPC(8)      Z$;SPC(2);N$(I9)
;SPC(10-LEN(N$(I9))); S(0,I9)
3440 PRINT:PRINT:PRINT
3450 NEXTI9
3460 IF P=4 THEN 3490
3470 FOR I9=1 TO 4-P :READZ$ :NEXT I9
3480 DATA "1st","2nd","3rd","4th"
3490 FORY9=0T026:PLOT1,Y9,10:NEXTY9
3500 INK4
3510 WAIT400
3520 REM**SORTING HISCORES**
3530 IF S(0,1)<HI(10)THEN 3600
3540 I9=1:I8=1
3550 REPEAT
3560 :IF S(0,I8)<=HI(I9) THEN I9=I9+1
:GOTO 3590
3570 :GOSUB 3610:I8=I8+1
3580 :IF I8>P THEN I9=11
3590 UNTIL I9>10
3600 GOTO 3700

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3610 REM SHUFFLE HIScores
3620 IF I9=10 THEN HI(10)=S(0,I8):H$(
10)=N$(I8):GOTO 3670
3630 FOR I7=10 TO I9 STEP -1
3640 :HI(I7)=HI(I7-1)
3650 :H$(I7)=H$(I7-1)
3660 NEXT
3670 HI(I9)=S(0,I8)
3680 H$(I9)=N$(I8)
3690 RETURN
3700 REM**PRINTING HIScores SCREEN**
3710 CLS:PAPER4:INK4
3720 PRINTCHR$(11)
3730 PRINTSPC(11)"## HIScores ##"
3740 PRINT:PRINT:PRINT
3750 FOR I9=1 TO 10
3760 READ Z$
3770 PRINTSPC(7)Z$:SPC(3)H$(I9);
3780 PRINTSPC(11-LEN(H$(I9)));HI(I9)
3790 PRINT
3800 NEXT I9
3810 FOR Y9=0 TO 25:PLOT1,Y9,10:NEXT Y9

3820 INK 6
3830 PLOT11,1,19:PLOT10,1,0:PLOT27,1,
20
3840 PLOT11,2,19:PLOT10,2,0:PLOT27,2,
20
3850 PLOT12,1,"## HIScores ##":PL
OT1,1,10:PLOT2,1,10
3860 DATA " 1st"," 2nd"," 3rd"," 4th"
3870 DATA " 5th"," 6th"," 7th"," 8th"
3880 DATA " 9th","10th"
3890 RETURN
3900 I=48005:POKEI,89:POKEI+2,65:POKE
I+4,72:POKEI+6,84:POKEI+8,90
3910 POKEI+10,69:POKEI+12,69
3920 POKEI+17,98:POKEI+18,121
3930 POKEI+20,66:POKEI+21,83:POKEI+22
,70
3940 POKEI+24,83:POKEI+25,111:POKEI+2
6,102:POKEI+27,116:POKEI+28,119
3950 POKEI+29,97:POKEI+30,114:POKEI+3
1,101
3960 RETURN

```

TAPE STORE

```

1 REM Tape Store
2 REM By K.D.Allen (May 1983) (c)
3 REM Orig basic V1.0
4 REM ## INITIALIZE ##
5 GRAB: HIMEM#B3FF
6 GOSUB 2000
7 POKE#20C,255:PRINTCHR$(20)
8 POKE#26A,10
15 DIM E(1):DIM A$(700):DIM B$(700):DI
M TST$(700)
16 CLS:PRINT SPC(114)
17 PRINT"Welcome to tape store....."
:PRINT"Please load the data tape,":PRI
NT SPC(152)
19 POKE#67,0
20 CALL#B85B,E
21 PRINT SPC(11);CHR$(142);"PLEASE WAI
T"
22 PRINT SPC(11);CHR$(142);"PLEASE WAI
T"
23 CALL#B85B,A$:PING
24 CALL#B85B,B$:PING
26 CALL#B85B,TST$:PING
30 E=E(1)
35 REPEAT
40 CLS:PAPER7:INK 0
50 PRINT"Do you want to :-":PRINT"(1)
List":PRINT"(2) Enter":PRINT"(3) Searc
h":PRINT"(4) Delete"

51 PRINT"(5) Save data":PRINT"(6) Exit
program":PRINT:PRINT"ENTER CHOICE (1-
6)"
53 PRINT:PRINT"REMEMBER when listing p
ress 0 twice to";
54 PRINT"return to the menu. During li
sting or"
55 PRINT"searching press P to pause, S
to cont."
60 REPEAT:GET Z$:UNTIL VAL(Z$)<7 AND V
AL(Z$)>0
65 CLS
70 ON VAL(Z$) GOSUB 80,200,500,800,100
0,1500
75 UNTIL Z$="6"
80 REM ### LIST ###
85 IF E=0 THEN RETURN
90 E=E-Q:Q=0: L=1
95 PAPER 0
100 REPEAT
130 PRINTCHR$(145);A$(L)
140 PRINTCHR$(146);B$(L)
141 PRINTCHR$(148)"Tape no ";LEFT$(TST
$(L),2);
142 PRINT CHR$(149);" Side no ";MID$(T
ST$(L),3,1);
143 PRINTCHR$(150);" Track no ";RIGHT$
(TST$(L),2)
147 PRINT

```

TAPE STORE

```

150 L=L+1:T$=KEY$
160 IF T$="p" THEN REPEAT:WAIT 1:UNTIL KEY$="s"
170 UNTIL L=E+1 OR L=699 OR T$="0"
180 GET Z$:RETURN
200 REM### INPUT ###
205 REPEAT
210 E=E+1
220 PRINT "Enter Track"
225 INPUT A$(E)
227 IF LEN(A$(E))>35 THEN PRINT:PRINT "ERROR too long.":GOTO 225
230 PRINT "Enter Artist"
240 INPUT B$(E)
250 IF LEN(B$(E))>35 THEN PRINT:PRINT "ERROR too long.":GOTO 240
260 INPUT "Enter tape no, side no, track no (ttstt)";TST$(E)
262 IF LEN(TST$(E))>5 THEN PRINT "ERROR incorrect length (TTSTT)":GOTO 260
263 IF VAL(MID$(TST$(E),3,1))>2 THEN PRINT "ERROR only 2 sides on a tape !!!":GOTO 260
265 CLS
270 PRINT "1 To cont, 2 To sort, 3 To Void."
280 REPEAT:GET Z$:UNTIL VAL(Z$)<4 AND VAL(Z$)>0
285 CLS:IF Z$="3" THEN E=E-1
290 UNTIL Z$="2"
295 REM### SORT ###
300 CLS
310 PRINT "SORTING...."
311 CALL #E6CA
312 Dx=1
315 Dx=Dx*2
320 IF Dx<=E THEN 315
325 Dx=(Dx-1)/2
330 IF Dx=0 THEN 400
335 FOR K=1 TO E-Dx
337 J=K
340 L=J+Dx
350 IF TST$(L)<TST$(J) THEN 360
355 GOTO 385
360 HOLD$=TST$(J):HOLD$(1)=A$(J):HOLD$(2)=B$(J)
365 TST$(J)=TST$(L)
367 A$(J)=A$(L)
369 B$(J)=B$(L)
370 TST$(L)=HOLD$:A$(L)=HOLD$(1):B$(L)=HOLD$(2)
375 J=J-Dx
380 IF J>0 THEN 340
385 NEXT K
390 GOTO 325

400 CALL #E804:RETURN
500 REM### SEARCH ###
520 PRINT "Do you wish to search under: -"
530 PRINT "Track, Artist, or Tape ?"
540 INPUT S$
550 IF S$<>"track" AND S$<>"artist" AND S$<>"tape" THEN 540
560 CLS
570 PRINT "Enter item to be searched"
580 INPUT Q$
582 IF S$="tape" AND ASC(Q$)>57 OR ASC(Q$)<48 THEN PRINT "Enter no only":GOTO 580
585 IF S$="tape" AND LEN(Q$)<>2 THEN PRINT "ERROR incorrect length (TT)":GOTO 580
590 CLS
595 FOR F=1 TO E
600 IF S$="track" AND A$(F)=Q$ THEN GOSUB 650
610 IF S$="artist" AND B$(F)=Q$ THEN GOSUB 650
615 IF S$="tape" AND LEFT$(TST$(F),2)=Q$ THEN GOSUB 650
620 NEXT F
625 PRINT
630 IF C=0 THEN PRINT S$;" not held on file."
635 GET Z$
640 C=0:RETURN
650 PAPER 0
660 PRINT CHR$(145);A$(F)
670 PRINT CHR$(146);B$(F)
680 PRINT CHR$(148)"Tape no ";LEFT$(TST$(F),2);
690 PRINT CHR$(149)" Side no ";MID$(TST$(F),3,1);
700 PRINT CHR$(150)" Track no ";RIGHT$(TST$(F),2)
710 PRINT
720 T$=KEY$
725 IF T$="p" THEN REPEAT:WAIT 2:UNTIL KEY$="s"
730 C=1
750 RETURN
800 REM### DELETE ###
802 PRINT "Track or Tape to be deleted?"
803 INPUT S$
804 IF S$<>"tape" AND S$<>"track" THEN 803
805 IF S$="tape" THEN GOSUB 900 ELSE GOSUB 807
806 GOSUB 300:RETURN
807 CLS

```


TAPE STORE

```

810 PRINT "Enter Track to be deleted"
820 INPUT D$
830 FORF=1TOE
840 IF A$(F)=D$ THEN TST$(F)="AAAAA":Q
=Q+1
850 NEXTF
870 RETURN
900 CLS:PRINT"Enter tape to be deleted
."
910 INPUT P$
912 IF ASC(P$)>57 OR ASC(P$)<48 THEN P
RINT"Enter number only":GOTO 910
913 IF LEN(P$)<> 2 THEN PRINT"ERROR in
correct length (TT)":GOTO 910
914 PRINTSPC(39);"Enter side no (S)"
915 INPUT S$
917 IF VAL(S$)>2 OR VAL(S$)<1 OR LEN(S
$)<>1 THEN PRINT"1 OR 2 ONLY....":GOTO
915
920 FOR F=1 TO E
930 IF LEFT$(TST$(F),2)=P$AND MID$(TST
$(F),3,1)=S$THEN TST$(F)="AAAAA":Q=Q+1
940 NEXT F
950 RETURN
1000 REM ### SAVE ###
1010 PRINT"START DATA TAPE....."
1020 PRINT"THEN PRESS ANY KEY AND WAIT
...."
1025 GET Z$
1027 E(1)=E
1030 POKE#67,0
1035 CALL1024,E
1036 PRINT SPC(201);CHR$(142)"PLEASE W
AIT"
1037 PRINT SPC(11);CHR$(142)"PLEASE WA
IT"
1040 CALL1024,A$
1050 CALL1024,B$
1070 CALL1024,TST$
1090 PRINT"DATA SAVED. DO YOU WISH TO
CONTINUE ?"
1100 GETZ$:IFZ$="Y"THEN RETURN
1500 REM ### END OF PROGRAM ###
1505 CLS:PRINT:PRINT
1510 PRINT"Are you sure ?": GET Z$
1520 IF Z$="n" THEN RETURN
1530 PRINTCHR$(17)CHR$(20)
1540 CLS
1550 END

2000 REM### ARRAY SAVER ###
2005 M=#B800:READD$
2008 CLS:PRINT SPC(152);"Please wait..
...."
2010 FORN=1TOLEN(D$)STEP2
2020 U=VAL("#"+MID$(D$,N,2)):POKEM,U:M
=M+1:NEXT
2030 READD$:IFD$<>"P"THEN2010
2040 DOKE#400,#0A4C:DOKE#402,#4CB8:DOK
E#404,#B858:RETURN
2050 DATA"55555555233944363855200BB908
20D6B820BAE6A92520C6E5A53320C6E5A53420
"
2060 DATA"C6E520EEB820A7E5242810032035
B82004E82860A000B101F017AAA002B10199D0
"
2070 DATA"0088D0F8E8CAF008B1D120C6E5C8
D0F520C3B890DE602095D5200BB90820D6B820
"
2080 DATA"96E62030E6C925D0F92030E68533
2030E68534A002B1CEC533C8B1CEE534B00620
"
2090 DATA"04E84C83C420EEB820EBE4242810
03209BB82004E82860A000B101F01C20F0D4AA
"
2100 DATA"E8A000CAF0082030E691D1C8D0F5
A002B9D000910188D0F820C3B890D96018A903
"
2110 DATA"65018501A89002E602A502C461E5
626020CAE62018B9A003B1CEAA88B1CEE901B0
"
2120 DATA"01CA853386346018A5CE65338561
A5CF65348562A004B1CE20F6D1855F84608501
"
2130 DATA"84026020E800C92CF0034CE4CF4C
E200A20020E800862785B420E8002086D1B006
"
2140 DATA"2004E84CE4CFA2008628862920E2
0090052086D1900BAA20E20090FB2086D1B0F6
"
2150 DATA"C924D006A9FF8528D00CC925D00F
A980852905B485B48A0980AA20E20086B5A69E
"
2160 DATA"A59F86CE85CFC5A1D004E4A0F01F
A000B1CEC8C5B4D006A5B5D1CEF00EC8B1CE18
"
2170 DATA"65CEAAC8B1CE65CF90D738602004
E8A22A4C85C455"
2180 DATA"P"

```

STARCRUISER

```

10 HIMEM #97FF:GOSUB5000:GOSUB3000:GO
SUB4000:GOSUB1000:POKE#983E,9
20 PRINTFRE(""):CLS:INK6:FORI=48000TO
48039
30 IF I/2=INT(I/2)THENPOKEI,102:POKEI
+40*9,103:GOTO34
32 POKEI,230:POKEI+40*9,231
34 NEXT
40 DOKE P,SS:GOSUB7500:GOSUB10000
50 GOSUB3500:PLAY1,1,0,0
60 FORF=60TO20STEP-1
70 SOUND 4,F,1:SOUND1,F+30,1:POKEP-1,
FNR(2)+103
80 NEXT:POKEP-1,SP:PLAY0,1,0,0:GOSUB3
700
90 FORI=48400TO48880STEP40:POKEI,19:N
EXT
100 REM *** M A I N L O O P ***
110 Q=P:P=P+40*((PEEK(KB)=UP)-(PEEK(K
B)=DOWN))
120 IF PEEK(P+2)<>SP THEN DOKEQ,BL:P=P
+1:GOTO2000
130 IF RND(1)>SK THENDOKE C(FNR(8)),R
K(FNR(2))
135 IF RND(1)>.98THENGOSUB4500:PLOT18
,26,STR$(S)
140 S=S+1:DOKEQ,BL:CALL SCROLL:DOKEP,
SS:GOTO110
500 PLOT NR*2,10,32:RETURN
600 FORI=1TO NR:PLOTI*2,10,111:NEXTI
610 PLOT1,10,0:RETURN
800 J=0:PLAY1,0,0,0:FORX=C(MP)TOC(MP)
-19 STEP-1
810 POKEX+1,32:POKEX,121
820 J=J+50:SOUND1,3000-J,4:WAIT10
830 NEXTX:POKEP-1,32
840 PLAY0,1,0,0:FORI=1TO30:SOUND4,FNR
(30),1
850 DOKEP,25956:WAIT3:DOKEP,BL
860 NEXTI:POP:PLOT1,10,"
870 POKEX+1,32:GOTO2000
1000 POKE#26A,10:DEF FNR(X)=INT(RND(1
)*X+1)
1010 PAPER2:INK0:CLS
1020 PLOT1,11,14:PLOT1,12,14
1030 PLOT12,11,"G E T R E A D Y"
1040 PLOT12,12,"G E T R E A D Y"
1050 GOSUB8500
1060 PAPER0
1070 P=48177:SS=25185:BL=8224:SP=32
1080 ST=48037:SCROLL=#9800
1090 KB=520:UP=156:DOWN=180
1100 S=0:RK(1)=27498:RK(2)=28259
1110 FORI=1TO8:C(I)=ST+40*I:NEXT
1120 RETURN
1500 POKE#26A,10:CLS:INK6:PAPER4

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1510 PLOT1,11,14:PLOT1,12,14
1520 PLOT10,11,"P L E A S E W A I T"
1530 PLOT10,12,"P L E A S E W A I T"
1540 RETURN
2000 POKE46870,56:PLAY0,1,0,0:POKEQ-1
,32:FORI=1TO15:DOKEP,BL
2010 CALL SCROLL:DOKEP,25956
2020 SOUND 4,FNR(30),2
2030 WAIT5
2040 NEXT:PLAY0,0,0,0:PLOT18,24,8:PLO
T19,24,114:PLOT24,25,0
2050 PLAY0,0,0,0:PLOT5,13,1:GOSUB6500
2060 PLOT 6,13,"YOUR SCORE : "
2070 S$=STR$(S):S$=RIGHT$(S$,LEN(S$)-
1)
2075 PLOT19,26,S$:LS=S
2080 S$=S$+" AT LEVEL "+SL$:PLOT19,13
,S$:GOSUB9000
2090 IF S>HS THEN GOSUB6000 ELSE GOSU
B6010
2095 GOSUB10000
2100 PLOT 6,22,"PRESS ANY KEY TO PLAY
AGAIN"
2105 PLOT4,22,1:PLOT5,22,23:PLOT34,22
,16
2110 GOSUB7000:GOSUB4000
2120 GOSUB1010:GOTO20
2500 LX=XP:XM=2-INT(RND(1)*3+1):XP=XP
+XM:IFXP<9THENXP=9
2510 IFXP>28THENXP=28
2520 LY=YP:YM=2-INT(RND(1)*3+1):YP=YP
+YM:IF YP<4THENYP=4
2530 IFYP>18THENYP=18
2540 IF LX<>XP OR LY<>YP THEN PLOT LX,
LY," "
2550 PLOTXP,YP,"jk":RETURN
3000 PRINTCHR$(12):POKE#26A,10:PAPER0
:INK0
3005 GOSUB8000
3010 PRINTCHR$(4)SPC(11)CHR$(27)"A"CH
R$(27)"J"CHR$(27)"WSTARCRUISER ";
3015 PRINTCHR$(27)"P"CHR$(4)
3020 PRINT:PRINTSPC(12)CHR$(27)"I,, ,
, , , , , , ,":PRINT:PRINT
3025 PRINTSPC(10)CHR$(96)" TARIK MUGH
AL 1983"
3030 PRINT:PRINT:PRINT" GUIDE YOUR S
TARCRUISER THROUGH THE"
3040 PRINT"METEOR SHOWER FOR AS LONG
AS YOU CAN,"
3050 PRINT"BEWARE OF THE ALIEN SPACES
HIPS!":PRINT" STEER YOUR WAY THROUGH"
;
3052 PRINT" THE SPACE-":PRINT"TUNNELS
WITHOUT CRASHING INTO"
3054 PRINT"THE SIDES!":PRINT

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STARCRUISER

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3060 PRINTSPC(6)"CONTROLS ARE AS FOLLOWS:-"
3070 PRINT"      UP.....CURSOR-UP KEY"
3080 PRINT"      DOWN.....CURSOR-DOWN KEY"
3090 PRINT:PRINT:PRINTSPC(9)">>>PRESS ANY KEY<<<":Z$=KEY$:WAIT100:INK7
3095 PLOT8,20,2:PLOT8,22,5:PLOT8,21,6
3100 A=RND(1)
3110 FORX=9TO26:PLOTX,20,"  jk"
3120 PLOTX,22,"  jk":IFKEY$<>" "THEN3140
3125 WAIT10
3130 NEXTX:PLOT27,20,"  ":PLOT27,22,"  ":GOTO3100
3140 PLAY1,0,0,0:FORI=1TO38
3150 CALL #9800:SOUND1,I*5+80,1
3160 NEXT:PLAY0,0,0,0:RETURN
3500 PLOT16,11,"IGNITION"
3510 PLOT1,11,2:PLOT2,11,12
3520 RETURN
3700 PLOT16,11,"      ":RETURN
4000 GOSUB8000:PRINTCHR$(12)CHR$(4):INK3:PAPER0:XP=19:YP=12:HL=500:S=0
4005 GOSUB7500:PLAY0,0,0,0
4010 PRINTSPC(6)CHR$(27)"JENTER SKILL LEVEL (1-9) ";
4020 PLOT6,0,1:PLOT6,3,1:GOTO4080
4030 IFZ=0THEN4060 ELSE SL=Z:PRINTZ$:WAIT20
4035 SL$=STR$(SL):SL$=RIGHT$(SL$,LEN(CSL$)-1)
4040 SK=Z/10:SK=1-SK:INK0:PAPER0:PRINTFRE("")
4050 PRINTCHR$(4):RETURN
4060 PLOTX+3,0,7:PLOTX+3,3,7:PLAY0,1,0,0:FORI=X+4TO36:GOSUB2500
4065 PLOTI,0," o":PLOTI,3," o"
4070 SOUND4,I-10,1:NEXTI:PLAY0,0,0,0:PLOT37,0,"  ":PLOT37,3,"  ":GOTO4100
4080 FORX=7TO28:PLOTX,0,"  ab":PLOTX,3,"  ab":GOSUB2500
4090 Z$=KEY$:IFZ$<>" "THENZ=VAL(Z$):GOTO4030
4100 NEXTX:PLOT29,0,"  ":PLOT29,3,"  ":GOTO4080
4500 PS=FNR(4):SOUND4,30,1:GOSUB4600:DOKEQ,BL:DOKEP,SS:FORI=1TO SL*25
4510 POKE C(PS),112:POKE C(PS+4),113
4520 Q=P:P=P+40*((PEEK(KB)=UP)-(PEEK(KB)=DOWN)):IFPEEK(P+2)<>SP THEN 4800
4530 POKEQ-1,32:DOKEQ,BL:CALL SCROLL:DOKEP,SS:POKEP-1,7
4540 SM=2-FNR(3):PS=PS+SM:IF PS=0THEN PS=1 ELSE IF PS=5 THEN PS=4
4550 NEXT:GOSUB4700:SOUND4,20,1:S=S+SL*25:DOKEP,BL:PLOT24,25,0
4555 PLOT3,24,8:POKEP-1,32:INK6:POKE48361,231:IF S<HL THEN RETURN
4560 HL=HL+500:POP:GOTO9500
4600 DOKEQ,BL:DOKEP,SS:PLOT18,24,12:PLOT24,25,7:FORI=1 TO SL*10
4605 POKEC(PS),112:POKEC(PS+4),113
4610 Q=P:P=P+40*((PEEK(KB)=UP)-(PEEK(KB)=DOWN)):IFPEEK(P+2)<>SP THEN 4800
4620 POKEQ-1,32:DOKEQ,BL:CALL SCROLL:DOKEP,SS:POKEP-1,FNR(2)+107
4630 NEXT:POKE46870,63:PLOT19,24,115
4640 INK5:POKE48361,231
4650 PLOT18,24,8:RETURN
4700 FORI=1TO18:Q=P:P=P+40*((PEEK(KB)=UP)-(PEEK(KB)=DOWN)):IFPEEK(P+2)<>SP THEN 4800
4720 DOKEQ-1,32:DOKEQ,BL:CALL SCROLL
4730 DOKEP,SS:POKEP-1,7:WAIT4:NEXT
4740 POKE46870,56:PLOT19,24,114:RETURN
4800 POP:GOTO120
5000 TEXT:A=#9800:PLAY0,0,0,0:GOSUB1500:HS$="0 "
5010 READ B:IFB=999THEN5140
5020 POKE A,B:A=A+1:GOTO5010
5030 DATA #A9,128,#85,128,#A9,187,#85,129
5040 DATA #A9,1,#85,130,#A5,128,#85,131
5050 DATA #A5,129,#85,132,#A6,130,#A5,131
5060 DATA #18,#69,40,#85,131,#A5,132
5070 DATA #69,0,#85,132,#CA,#D0,240
5080 DATA #A0,3,#B1,131,#88,#91,131,#C8
5090 DATA #C8,#C0,39,#D0,245,#A9,32
5100 DATA #91,131,#88,#91,131
5110 DATA #A6,130,#E8,#E0,28
5120 DATA #F0,5,#86,130,#18,#90,198,#60
5130 DATA 999
5140 READ C:IFC=999THENRETURN
5150 FORI=46080+8*C TO 46087+8*C
5160 READ X:POKE I,X:NEXT:GOTO5140
5170 DATA 97,0,0,48,63,31,63,15,0
5180 DATA 98,0,0,0,32,60,63,56,0
5190 DATA 99,1,2,5,10,10,4,3,0
5200 DATA 100,0,5,16,2,36,1,20,0
5210 DATA 101,0,8,34,8,1,8,36,0
5220 DATA 102,0,18,12,12,18,0,30,51
5230 DATA 103,51,30,0,18,12,12,18,0
5240 DATA 104,0,0,16,4,18,8,32,0
5250 DATA 105,0,48,40,28,47,30,40,32
5260 DATA 106,0,0,7,31,42,31,7,0

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5270 DATA 107,0,0,48,60,42,60,48,0
5280 DATA 108,0,0,0,4,1,8,0,0
5290 DATA 109,0,0,0,20,9,18,0,0
5300 DATA 110,48,44,18,42,52,20,8,48
5310 DATA 111,0,0,0,16,14,16,0,0
5320 DATA 112,0,0,62,62,54,42,20,8
5330 DATA 113,8,20,42,54,62,62,0,0
5340 DATA 114,63,33,45,45,45,45,33,63
5350 DATA 115,0,2,36,48,55,32,4,2
5360 DATA 116,0,31,16,31,1,31,0,63
5370 DATA 117,0,31,17,17,17,31,0,63
5380 DATA 118,0,17,25,21,19,17,0,63
5390 DATA 119,0,31,17,31,17,17,0,63
5400 DATA 120,0,31,17,31,18,17,0,63
5410 DATA 121,0,0,18,12,12,18,0,0
5999 DATA 999
6000 HS$=STR$(S):HS=S:HS$=RIGHT$(HS$,
LEN(HS$)-1)
6005 HS$=HS$+" AT LEVEL "+SL$
6010 PLOT 7,16,"HI-SCORE : "
6020 PLOT 18,16,HS$:PLOT6,16,4
6030 PLAY1,0,0,0:FORV=5TO1STEP-1
6040 FORF=50TO300STEP25
6050 SOUND1,F,V:NEXTF,I
6060 PLAY0,0,0,0:RETURN
6500 PLOT14,9,14:PLOT14,10,14
6510 PLOT15,9,"GAME OVER":PLOT15,10,"
GAME OVER"
6520 PLOT13,9,4:PLOT13,10,5
6530 WAIT100:RETURN
7000 ST$="STARCRUISER....."+CHR$(96)+
" TARIK MUGHAL 1983"+"....."
7005 FORI=1TO3:Z$=KEY$:POKEC(I)-37,16
:POKEC(I)-36,2
7007 POKEC(I+5)-37,16:POKEC(I+5)-36,2
:NEXT:POKE48160,10
7008 POKE48200,10:POKE48161,7:POKE482
01,7
7010 I=0:REPEAT:I=I+1:IFI>LEN(ST$)THE
NI=1
7020 PLOT37,3,MID$(ST$,I,1):PLOT37,4,
MID$(ST$,I,1)
7030 X=FNR(15):IFX=5THENDOKE C(FNR(3)
),RK(FNR(2)):GOTO7040
7035 IFX=10THENDOKE C(FNR(3)+5),RK(FN
R(2))
7040 POKE48298,SP:DOKE48299,BL:CALL S
CROLL:DOKE48299,SS
7045 POKE48298,FNR(2)+107:UNTIL KEY$(
>""):RETURN
7500 PLOT 8,19,10:PLOT 8,20,10
7510 PLOT 9,19,"S T A R C R U I S E R
"
7520 PLOT 9,20,"S T A R C R U I S E R
"
7530 PLOT7,19,1:PLOT7,20,5:RETURN
8000 FORI=48000TO48039:POKEI,16:NEXT:
RETURN
8500 PLAY1,0,0,0:FORI=1TO4:FORF=400TO
150STEP-5
8510 SOUND1,F,1:NEXTF,I
8520 PLAY0,0,0,0:RETURN
9000 PLAY1,0,0,0:FORF=300TO100STEP-10
:CALL SCROLL:WAIT5
9010 SOUND1,F,1:NEXT:PLAY0,0,0,0:RETU
RN
9500 GOSUB9600:FORF=5TO30:POKEP-1,32:
DOKEP,BL:CALL SCROLL:DOKEP,SS
9510 SOUND4,F,1:SOUND1,F+80,1:POKEP-1
,FNR(2)+107:WAITF-4:NEXTF
9515 PLOT18,26,STR$(S):PLAY0,1,0,0
9520 SL=SL+1:IFSL=10THENSL=9
9525 SK=SL/10:SK=1-SK:PLOT18,25,STR$(
SL):NR=5:GOSUB600
9530 GOSUB9850:GOSUB9700:GOSUB9800:PL
AY0,1,0,0
9540 GOTO110
9600 FORI=1TO16:DOKEP,SS:POKEP+I+1,11
1:SOUND4,I,4
9610 WAIT3:DOKEP,BL:POKEP+I+1,32:CALL
SCROLL:POKEP+I+1,32:NEXTI
9620 SOUND4,20,1:PLAY1,1,0,0:RETURN
9650 PLOT2,10,"":RETURN
9700 FORI=1TO30:POKEP-1,FNR(2)+107
9710 SOUND4,31-I,1:WAIT8:NEXT:POKEP-1
,32
9720 SOUND4,20,1:RETURN
9800 PLOT3,25,12:PLOT3,26,12:PLAY1,0,
0,0:FORI=1TO4
9810 SOUND1,150,1:WAIT30
9820 SOUND1,200,1:WAIT30:NEXT
9830 PLOT3,25,8:PLOT3,26,8:RETURN
9850 MP=FNR(8):POKEC(MP),111:PLAY1,0,
0,0:SOUND1,4000,4
9860 IFPEEK(KB)=132THEN9900 ELSE POKE
P-1,FNR(2)+107
9870 QP=MP:MP=2-FNR(3)+MP:IFMP=0THENM
P=1
9880 IFMP=9THENMP=8
9890 POKEC(QP),32:POKEC(MP),121:GOTO9
860
9900 GOSUB500:PLAY0,1,0,0:FORI=P+3TOP
+20:POKEI-1,32
9905 IFPEEK(I)=121THENPOKEI,32:GOSUB9
650:RETURN
9910 POKEI,111:SOUND4,I-P-2,2
9920 NEXT:POKEI-1,32:PLAY1,0,0,0:SOUN
D1,4000,4
9930 NR=NR-1:IFNR>0THEN9860 ELSE800
10000 PLOT5,24,"NAV. LIGHTS : r"
10010 PLOT5,25,"LEVEL :":PLOT19
,25,SL$

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STARCRUISER

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10020 PLOT5,26,"SCORE" : " : PLOT18
,26,STR$(S)
10030 FOR Y=24 TO 26 : PLOT1,Y,7 : NEXT
10040 PLOT18,24,7
10050 X$="t u v w x" : FOR X=26 TO 30 : PLOTX,25
,ASC(MID$(X$,X-25,1))+128
10060 NEXT X : PLOT24,25,0 : PLOT23,25,12
10070 PLOT26,24,"H.S." : " : PLOT32,26,"
"
10080 PLOT31,24,STR$(VAL(HS$)) : PLOT25
,24,8
10090 PLOT26,26,"L.S." : " : PLOT32,26,"
"
10100 PLOT31,26,STR$(LS$) : PLOT25,26,8
10110 RETURN

```

SLOT MACHINE

```

50 REM*****
51 REM*
52 REM* SLOT-MACHINE *
53 REM*
54 REM*****
65 POKE #26A,10
70 GOSUB 8900
80 IF PEEK(#B400+8*ASC("c"))=0 THEN G
OSUB 8990
85 CLS
90 PAPER 7: INK0
95 DIM A$(2,6) : GOSUB 8500
97 REM *****
98 REM * FILL SCREEN *
99 REM *****
100 FOR X= 2 TO 19
110 PLOT X,4,"$" : PLOT X,24,"#"
120 NEXT
130 FOR X=5 TO 23
140 PLOT 1,X,CHR$(34) : PLOT 19,X,CHR
$(34)
145 IF X>7 THEN PLOT 21,X,"?" : PLOT 22
,X,"?"
147 IF X>12 THEN PLOT 20,X,"?"
150 NEXT
160 PLOT 21,24,"#" : PLOT 21,7,"$" : PL
OT 20,21,"#" : PLOT 20,22,"$"
200 FOR X= 4 TO 17
210 PLOT X,15,"$" : PLOT X,20,"#"
220 NEXT
230 FOR X=16 TO 19
240 PLOT 3,X,CHR$(34) : PLOT 18,X,"?"
243 PLOT 8,X,"x" : PLOT 13,X,"x" : PLOT 7
,X,CHR$(0) : PLOT 12,X,CHR$(0)
246 PLOT 17,X,CHR$(0)
250 NEXT
400 PLOT 30,2,A$(1,6)
401 PLOT 24,2,A$(1,6)+A$(1,6)+A$(1,6)
402 PLOT 24,3,A$(2,6)+A$(2,6)+A$(2,6)
+CHR$(0)+"= 200"
411 PLOT 24,4,A$(1,5)+A$(1,5)+A$(1,5)
412 PLOT 24,5,A$(2,5)+A$(2,5)+A$(2,5)
+CHR$(0)+"= 100"
421 PLOT 24,6,A$(1,4)+A$(1,4)+A$(1,4)
422 PLOT 24,7,A$(2,4)+A$(2,4)+A$(2,4)
+CHR$(0)+"= 18"
431 PLOT 24,8,A$(1,3)+A$(1,3)+A$(1,3)
432 PLOT 24,9,A$(2,3)+A$(2,3)+A$(2,3)
+CHR$(0)+"= 15"
441 PLOT 24,10,A$(1,2)+A$(1,2)+A$(1,2)
]
442 PLOT 24,11,A$(2,2)+A$(2,2)+A$(2,2)
]+CHR$(0)+"= 12"
451 PLOT 24,12,A$(1,1)+A$(1,1)+A$(1,1)
]
452 PLOT 24,13,A$(2,1)+A$(2,1)+A$(2,1)
]+CHR$(0)+"= 10"
461 PLOT 24,14,A$(1,1)+A$(1,1)+CHR$(0)
]+ "$ $"
462 PLOT 24,15,A$(2,1)+A$(2,1)+CHR$(0)
]+ " = 5"
471 PLOT 24,16,A$(1,1)+CHR$(0)+"$ $ $"
"
472 PLOT 24,17,A$(2,1)+CHR$(0)+"
= 2"
480 PLOT 25,23,"COINS: 100"
485 PLOT 6,6,"ORIC1-SLOT"
700 REM *****
701 REM * SET UP INITIAL VALUES *
702 REM *****
710 Z=0:X=INT(RND(1)*6+1):GOSUB 8000
720 Z=1:X=INT(RND(1)*6+1):GOSUB 8000
730 Z=2:X=INT(RND(1)*6+1):GOSUB 8000
740 S=100
1997 REM *****
1998 REM * WAIT FOR INPUT *
1999 REM *****
2000 IF NOT HOLD THEN 2003
2001 PLOT 3,21,CHR$(23)+"HOLD"+CHR$(2
3)+"HOLD"+CHR$(23)+"HOLD"+CHR$(23)
2002 GOTO 2009
2003 PLOT 3,21," "
2009 GET A$
2010 IF A$=" " THEN 2800
2015 IF A$="S" THEN CLS:STOP
2020 IF HOLD=FALSE THEN 2009
2030 IF A$="1" THEN H1=-1-H1:PLOT 3,2
1,CHR$(23+2*(H1=TRUE))
2040 IF A$="2" THEN H2=-1-H2:PLOT 8,2
1,CHR$(23+2*(H2=TRUE))

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SLOT MACHINE

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2050 IF A$="3" THEN H3=-1-H3:PLOT 13,
21,CHR$(23+2*(H3=TRUE))
2060 GOTO 2009
2797 REM *****
2798 REM * START ROLLING *
2799 REM *****
2800 PLAY 1,1,0,0:SOUND 1,3000,3
2802 S=S-1
2805 FOR X9= 1 TO 6
2810 IF NOT H1 THEN V1=V1+1: IF V1>6
THEN V1=1
2820 Z=0:X=V1:GOSUB 8000
2830 IF NOT H2 THEN V2=V2+1: IF V2>6
THEN V2=1
2840 Z=1:X=V2:GOSUB 8000
2850 IF NOT H3 THEN V3=V3+1: IF V3>6
THEN V3=1
2860 Z=2:X=V3:GOSUB 8000
2870 NEXT
3000 REM
3010 IF NOT H1 THEN V1=P(INT(RND(1)*2
0+1)):CALL #FB10: WAIT 10
3030 Z=0:X=V1:GOSUB 8000
3110 IF NOT H2 THEN V2=P(INT(RND(1)*2
0+1)):CALL #FB10: WAIT 10
3130 Z=1:X=V2:GOSUB 8000
3210 IF NOT H3 THEN V3=P(INT(RND(1)*2
0+1)):CALL #FB10
3230 Z=2:X=V3:GOSUB 8000
3955 IF H <= 0 THEN 3990
3960 PLOT 23,2*H,23
3970 PLOT 23,2*H+1,23
3987 REM *****
3988 REM * HAVE WE GOT A WINNER? *
3989 REM *****
3990 P=0: H=0
4000 IF V1=6 AND V2=6 AND V3=6 THEN P
=200: H=1
4010 IF V1=5 AND V2=5 AND V3=5 THEN P
=100: H=2
4020 IF V1=4 AND V2=4 AND V3=4 THEN P
=18: H=3
4030 IF V1=3 AND V2=3 AND V3=3 THEN P
=15: H=4
4040 IF V1=2 AND V2=2 AND V3=2 THEN P
=12: H=5
4050 IF V1=1 AND V2=1 AND V3=1 THEN P
=10: H=6:GOTO 4090
4060 IF V1=1 AND V2=1 THEN P=5: H=7:G
OTO 4090
4080 IF V1=1 AND P=0 THEN P=2: H=8
4090 REM
5020 IF H<=0 THEN 5050
5030 PLOT 23,2*H,12
5040 PLOT 23,2*H+1,12
5050 IF (H1 OR H2 OR H3) OR P>0 THEN
HOLD=0 ELSE HOLD=-1
5055 H1=FALSE:H2=FALSE:H3=FALSE
5070 IF P>0 THEN 5700
5075 S$=STR$(S)
5080 IF S>=0 THEN S$=RIGHT$(S$,LEN(S$
)-1)
5085 PLOT 32,23,S$+" "
5090 GOTO 2000
5700 FOR A9= 1 TO P
5710 FOR A8=1 TO 100 STEP5:SOUND 1,A8
,3 : WAIT 1: NEXT
5712 S=S+1: S$=STR$(S)
5714 IF S>=0 THEN S$=RIGHT$(S$,LEN(S$
)-1)
5715 PLOT 32,23,S$+" "
5720 WAIT 5: NEXT
5730 PLAY 0,0,0,0
5740 GOTO 5090
7997 REM *****
7998 REM * PLOT FIGURE *
7999 REM *****
8000 PLOT 4+Z*5,17,A$(1,X)
8010 PLOT 4+Z*5,18,A$(2,X)
8200 RETURN
8497 REM *****
8498 REM * SET UP FIGURES *
8499 REM *****
8500 A$(1,6)=CHR$(0)+"ab"
8501 A$(2,6)=CHR$(0)+"cd"
8510 A$(1,5)=CHR$(2)+"ef"
8511 A$(2,5)=CHR$(2)+"gh"
8520 A$(1,4)=CHR$(3)+"ij"
8521 A$(2,4)=CHR$(3)+"kl"
8530 A$(1,3)=CHR$(4)+"mn"
8531 A$(2,3)=CHR$(4)+"op"
8540 A$(1,2)=CHR$(2)+"qr"
8541 A$(2,2)=CHR$(1)+"st"
8550 A$(1,1)=CHR$(2)+"uv"
8551 A$(2,1)=CHR$(1)+"wx"
8600 RETURN
8897 REM *****
8898 REM * PROBABILITIES *
8899 REM *****
8900 DIM P(20): FOR X=1TO20: READ P(X
):NEXT
8910 RETURN
8930 DATA 1,1,1,1,1,2,2,2,2,2,3,3,3,3
,4,4,4,5,5,6
8989 REM *****
8990 REM * USERDEFINED CHARS. *
8991 REM *****
8992 Z=#B400+8*ASC("a")
8995 FOR X1= 1TO 6
9005 FOR X2=1 TO 32
9010 READ Y
9020 POKE Z,Y

```


SLOT MACHINE

```

9030 Z=Z+1: NEXT :NEXT
9100 Z=#B400+8*ASC("I")
9110 FOR X1=1TO40
9120 READ Y
9130 POKE Z,Y: Z=Z+1
9140 NEXT
9200 RETURN
9800 REM BAR
9802 DATA 0,0,0,0,0,63,63,14
9804 DATA 0,0,0,0,0,63,63,51
9806 DATA 21,12,21,13,63,63,0,0
9808 DATA 21,19,21,21,63,63,0,0
9820 REM FOUR-LEAF CLOVER
9822 DATA 12,14,30,30,63,63,63,28
9824 DATA 6,14,31,31,31,63,60,48
9826 DATA 3,15,62,62,30,28,0,1
9828 DATA 60,62,62,46,46,44,32,0
9840 REM BELL
9842 DATA 3,4,4,3,1,7,15,15
9844 DATA 48,8,8,48,32,56,60,60
9846 DATA 15,15,31,31,63,31,7,1
9848 DATA 60,60,62,62,63,62,56,32

```

```

9898 REM CHERRY
9900 DATA 0,0,0,0,0,0,1,1
9902 DATA 0,0,12,8,16,32,0,0
9904 DATA 3,7,15,15,15,15,7,3
9906 DATA 48,56,44,60,60,60,56,48
9975 REM LINES
9980 DATA 32,32,32,32,32,32,32,32
9982 DATA 1,1,1,1,1,1,1,1
9984 DATA 63,0,0,0,0,0,0,0
9986 DATA 0,0,0,0,0,0,0,63
9988 DATA 8,8,8,8,8,8,8,8
28020 S=S-1

9860 REM PLUM
9862 DATA 0,0,1,3,7,7,15,31
9864 DATA 0,60,62,63,63,63,63,63
9866 DATA 31,63,63,63,63,63,31,15
9868 DATA 62,62,62,60,56,48,48,0
9880 REM STRAWBERRY
9882 DATA 0,0,0,0,0,0,10,7
9884 DATA 0,0,24,24,48,32,36,60
9886 DATA 15,27,63,62,55,61,31,12
9888 DATA 60,62,55,63,59,63,55,62

```

PUSS IN BOOTS

```

1 REM ** Puss in Boots **
2 REM ** an adventure game for the 48
K ORIC 1 computer **
3 REM *** <c> S.W. Lucas ***
4 REM ** version 1B January 1984 **
5 PRINTCHR$(17):REM TURN OFF CURSOR
10 TEXT:GRAB:PAPER0:INK7:REM ** RELEA
SE HIRES MEMORY AREA **
20 GOSUB 5000:REM TITLES AND INSTRUCTIONS
30 REM DATA FOR MUSIC
40 DATA1,1,3,1,5,1,1,3,5,6,8,1,1,1,3,5,
6,8,1,1,3,1,8,1,10,1,12,1,12,10,8,6,5
50 DATA3,1
60 AX=0:BX=0:CX=0:DX=0:EX=0:FX=0:GX=0
:HX=0:IX=0:JX=0
70 KX=0:LX=0:MX=0:NX=0:MX=0:NX=0:OX=0
80 PX=1:QX=0:RX=0:SX=0:TX=0:UX=0:VX=0
:WX=0:XX=0:YX=0:ZX=0
100 AQ$=""
110 SA=0:SB=0:SC=0:SD=0:SE=0:SS=0:AB=
0:AA=0:AC=0:AD=0:AE=0
120 AF=0:AG=0:AH=0
150 CLS:PAPER0:INK1
160 FOR X=1TO2:PLOT1,X,X
161 PLOT2,X,14
162 PLOT8,X,"<C> S.W. LUCAS 1984"
164 NEXT X
165 PRINT:PRINT:PRINT
170 PRINT:PRINT:PRINT:PRINT"Please wa

```

```

it a moment"
175 DIM S$(103,4),X$(35),N$(33),Q$(10
3),G$(30),U$(3),B$(30,1),N$(33)
180 FOR H=1TO51:READQ$(H):FORD=1TO4:R
EADS$(H,D):NEXTD,H
185 FOR H=1TO16:READG$(H),B$(H,1):NEX
T
187 FORH=1TO22:READN$(H),N$(H):NEXT
188 CLS
189 INK7
190 REPEAT
200 IF PX=50ANDUX=1THENWX=WX+1:PX=51:
K=1
210 IFPX=50ANDUX<>1THENPRINTCHR$(129)
"Whoops....I've forgotten the ring." :K
=1
220 IFPX=14ANDAE=1THENGOSUB3270
230 GOSUB2550:REM FIND SCORE
240 PRINTCHR$(131)"I am :-"
242 PRINTQ$(PX)
243 A$="":IF S$(PX,1)>0THENA$="North"
250 IFS$(PX,2)>0ANDLEN(A$)>0THENA$=A$
+",South"
255 IFS$(PX,2)>0ANDLEN(A$)=0THENA$="S
outh"
260 IFS$(PX,3)>0ANDLEN(A$)>0THENA$=A$
+",East"
265 IFS$(PX,3)>0ANDLEN(A$)=0THENA$="E
ast"
270 IFS$(PX,4)>0ANDLEN(A$)>0THENA$=A$
+",West"

```

PUSS IN BOOTS

```

275 IFS$(P$,4)>0ANDLEN(A$)=0THEN A$="W
est"
280 IFS$(P$,1)=0ANDS$(P$,2)=0ANDS$(P$,
3)=0ANDS$(P$,4)=0THEN A$=""
290 IFP$=45THEN A$="Nowhere...The King
won't let me!!!"
300 IFP$=20R$=4THEN A$=A$+", In"
310 IFP$=8THEN A$="Up, Out" ELSE IFP$=9
THEN A$="Down"
320 IFP$=18THEN A$=A$+", Up"
325 IFP$=22THEN A$=A$+", Down"
330 IFP$=46ORP$=51THEN A$="nowhere !"
335 FF=FREE(""):REM GARBAGE COLLECTION
350 PRINT:PRINTCHR$(130);"I can go :-
"
355 PRINTA$:PRINT:PRINT:PRINT
360 E=0:FOR T=1TO20:PP$=0:IFB$(T,1)=P$
THEN PP$=1
370 IF PP$=1THEN 390
380 NEXT T:GOTO410
390 IFE=0 THENPRINTCHR$(134)"I can se
e :-"
400 PRINTG$(T):E=E+1:GOTO380
410 PRINT:PRINTCHR$(133)"What shoul'd
I do ";
412 INPUT Z$
414 B$=LEFT$(Z$,2):C$=LEFT$(Z$,3)
420 CLS
422 PRINTCHR$(134)"Hang on a second!"
:PING
430 K=0
440 IF C$="ASK"ORC$="SAY"ORC$="TAL"TH
ENGOSUB3490
450 IF C$="LOO"THENK=1
460 IFC$="SCO"THENK=1:GOSUB2550
465 IFC$="EAT"THENPRINT"I'm absolutel
y full and couldn't eat another thing
":K=1
470 IFC$="RUB"THENPRINT"Don't be sill
y now!":K=1
480 IFC$="DRI"THENPRINT"I'm not thirs
ty at the moment thank you!":K=1
485 IFC$="THR"THENPRINT"I'm not throw
ing anything here!":K=1
490 IFC$="HEL"THENK=1:GOSUB2580
500 IFC$="SAY"ORC$="SPE"ORC$="TAL"THE
NPRINTCHR$(129)"O.K....nobody is liste
ning!"
504 IFC$="SAY"ORC$="SPE"ORC$="TAL"THE
N K=1
510 IFC$="RUN"THENK=1:GOSUB2910
520 IFC$="WEA"ORC$="TRY"THENK=1:GOSUB
2980
530 IFC$="PRA"ORC$="CRY"THENK=1:GOSUB
2400
540 IF(B$="N"ORLEFT$(Z$,4)="GO N")AND
S$(P$,1)<>0THENP$=S$(P$,1):K=1
550 IF(B$="S"ORLEFT$(Z$,4)="GO S")AND
S$(P$,2)<>0THENP$=S$(P$,2):K=1
560 IF(B$="E"ORLEFT$(Z$,4)="GO E")AND
S$(P$,3)<>0THENP$=S$(P$,3):K=1
570 IF(B$="W"ORLEFT$(Z$,4)="GO W")AND
S$(P$,4)<>0THENP$=S$(P$,4):K=1
580 IFB$="RE"THENPRINT"CATS can't rea
d you know!!!" :K=1
585 IF(B$="N"ORB$="S"ORB$="E"ORB$="W"
)ANDK<>1THENPRINT"I can't go that way!
":K=1
600 IFC$="PHO"THENPRINT"How can I do
that here dummy!!!" :K=1
610 IFC$="ENT"ORC$="DIN"ORC$="FEE"ORC
$="LUN"ORC$="BAN"THENK=1:GOSUB3630
620 IFB$="PI"ORB$="FU"THENK=1:GOSUB30
60
630 IFC$="HID"THENGOSUB3420
640 IFC$="BUY"THENPRINT"What do you t
hink I am..made of money?":K=1
650 IFC$="INU"THENGOSUB2070
660 IFC$="ROW"ORC$="SAI"THENPRINT"Jus
t how am I supposed to do that?":K=1
665 IFZ$="GO BOAT"THENPRINT"Don't be
such an idiot!":K=1
670 IFB$="UP"ORB$="U "ORC$="CLI"ORZ$=
"GO UP"THENK=1:GOSUB1170
680 IFC$="DOW"ORB$="D "ORZ$="GO DOWN"
THENK=1:GOSUB1210
690 IFC$="OUT"OR B$="O "ORZ$="GO OUT"
THENK=1:GOSUB1260
700 IF(B$="IN"ORZ$="GO IN")ANDK=0THEN
K=1:GOSUB1310
710 IFC$="PUS"THENK=1:GOSUB2810
720 IFC$="WAS"THENPRINTCHR$(134);"I'm
not a servant you know!":K=1
730 IFC$="DAN"THENPRINTCHR$(131)"O.K.
nobody seems to appreciate my"
731 IFC$="DAN"THENPRINTCHR$(131)"danc
ing though!":K=1
740 IFC$="RID"ORZ$="GO RIDE"THENPRINT
"not yet!!!!!!":K=1
750 IFC$="WAI"THENK=1:GOSUB2860
760 IFC$="JUM"ORC$="DIV"THENK=1:GOSUB
2840
770 IFC$="GET"ORC$="TAK"ORC$="GRA"THE
NK=1:GOSUB1520
780 IFC$="DRO"ORC$="LEA"ORC$="PUT"THE
NGOSUB1870
790 IFC$="SWE"THENPRINTCHR$(131)"Don'
t be silly!":K=1
800 IFC$="OPE"THENPRINT"not yet!":K=1
810 IFC$="JNL"THENK=1:GOSUB3380
820 IFC$="KIS"THENK=1:GOSUB2170
830 IFC$="GIU"THENGOSUB2190

```

PUSS IN BOOTS

```

840 IFC$="EXA"THENPRINT"I can't see a
nything special!":K=1
850 IFC$="SEA"THENGOSUB2520
860 IFC$="KIL"ORC$="SHO"ORC$="ATT"ORC
$="DES"THENGOSUB2210
865 IFC$="SWI"THENPRINT"I haven't lea
rnt to swim yet!":K=1
870 IFC$="PUL"THENPRINT"I can't do th
at just yet":K=1
880 IFK<>1THENPRINTCHR$(135);"I'm afr
aid that I can't understand"
882 IFK<>1THENPRINTCHR$(135);"you..we
ll cats do only have a limited"
884 IFK<>1THENPRINTCHR$(135);"vocabul
ary you know !"
890 UNTILWZ=10
900 GOTO 1000
910 END
920 REM ** FOLLOWING LINES ARE ALL SU
BROUTINES
999 REM WIN ROUTINE
1000 CLS
1005 PRINT:PRINT:PRINT:PRINT:PRINT:PR
INT:PRINT:PRINT:PRINT:PRINT
1010 FORX=1TO2
1020 PLOT1,X,X:PLOT2,X,14
1030 PLOT12,X,"WELL DONE !!!"
1031 NEXT X
1032 FORX=7TO8
1033 PLOT1,X,X-4:PLOT2,X,14
1040 PLOT3,X,"You have solved this ad
venture."
1050 NEXT
1060 PRINT" You have helped the Mille
r's son to"
1070 PRINTCHR$(131)"MARRY the beautif
ul princess."
1080 PRINT" You all live happily ever
after in the"
1090 PRINTCHR$(131)"ROYAL PALACE with
the new PRINCE and"
1095 PRINTCHR$(131)"PRINCESS!"
1100 RESTORE
1105 FOR T= 1 TO 34:READ X
1110 MUSIC1,3,X,0
1115 PLAY1,0,4,500
1120 WAIT10
1125 NEXT
1130 PLAY0,0,0,0
1140 PLOT1,22,1:PLOT2,22,"Would you l
ike another game ? <Y/N>"
1142 REPEAT
1144 GETT$
1146 UNTIL T$="Y"ORT$="N"
1148 IFT$="Y"THEN PRINTCHR$(17):RUN
1150 END
1160 REM ** GO UP
1170 K=1
1175 IFPZ=8THENPRINT"O.K. I climb the
steps":PZ=9:RETURN
1180 IFPZ=18THENPRINT"O.K. I climb th
e stairs.":PZ=22:RETURN
1190 PRINTCHR$(131)"Now then...don't
be silly!"
1195 PRINTCHR$(130)"I can't do that h
ere!":RETURN
1200 REM ** DOWN ROUTINE **
1210 K=1
1220 IFPZ=9THENPRINTCHR$(130)"I climb
down the steps!":PZ=8:RETURN
1230 IFPZ=22THENPRINTCHR$(129)"O.K. I
go down.":PZ=18:RETURN
1240 PRINT"I can't do that just yet"
CHR$(131)"STUPID!":K=1:RETURN
1250 REM ** GO OUT **
1260 K=1
1270 IFPZ=21THENPZ=4:PRINT"O.K. I go
out":RETURN
1280 IFPZ=8THENPRINT"O.K.":PZ=2:RETUR
N
1290 PRINTCHR$(134)"NOT NOW STUPID":R
ETURN
1300 REM ** GO IN ROUTINE
1310 K=1
1320 IFPZ=4THENPRINTCHR$(131)"I go in
to the shop":PZ=21:RETURN
1330 IFPZ=2THENPZ=8:PRINT"O.K.":RETUR
N
1335 PRINT"NOT HERE !!!!":K=1:RETURN
1340 DATAoutside an old rundown mill,
2,5,7,3
1341 DATAoutside an old barn.,0,1,0,0
1342 DATA on an overgrown footpath.,0
,4,1,0
1344 DATA outside the village shop.,3
,0,0,0
1346 DATA inside the old mill. It is
full of cobwebs.,1,6,0,0
1350 DATA in the living quarters. It'
s deserted.,5,0,10,0
1355 DATA in an overgrown garden.,0,0
,11,1
1360 DATAinside the old barn. A ladde
r leads upto the hayloft.,0,0,0,0
1365 DATAinside the hayloft. The ladd
er leads down from here.,0,0,0,0
1370 DATA in a bedroom. It's thick wi
th dust.,0,0,0,6
1375 DATA on a narrow footpath. It is
too muddy to go EAST without boots.
1377 DATA0,0,0,7
1380 DATA by a rabbit hole,0,13,0,11

```

PUSS IN BOOTS

```

1390 DATA outside an old castle. The
guards will not let me pass South.
1392 DATA 12,0,0,0
1395 DATA in an eerie courtyard. The
guard won't let me go North.,0,15,0,0
1397 DATA at the entrance to the King
's chamber,14,18,16,19
1400 DATA at the Northern end of the K
ing's chamber.,0,17,0,15
1402 DATA at the King's bedside. Two
large dogs prevent me going East.
1404 DATA 16,0,0,0
1410 DATA at the bottom of some steps
,15,0,0,0
1412 DATA on a footpath leading into
the country,0,20,15,0
1415 DATA on a bracken covered hillsi
de. There are pheasants to be seen.
1417 DATA 19,0,0,0
1420 DATA inside a small village shop
.,4,0,0,0
1422 DATA at the top of some steps.,0
,23,0,0
1424 DATA in a long passage.,22,26,24
,27
1425 DATA in a narrow passage.,0,0,25
,23
1426 DATA in a small dusty room. Ever
ything is covered with sheets.
1428 DATA 0,0,0,24
1430 DATA on the battlements. I see f
ields in the distance.,23,0,0,0
1435 DATA in a passage.,0,28,23,29
1436 DATA in an empty chamber.,27,0,0,
0
1438 DATA in a large room full of old
furniture.,0,0,27,0
1440 DATA in the royal kitchens.,0,0,
31,17
1445 DATA in a backyard (by the royal
dustbins!).,0,32,0,30
1448 DATA on a footpath.,31,33,0,0
1450 DATA by a locked gate.,32,0,0,0
1452 DATA by the river banks.,33,35,0,
0
1455 DATA on the banks of the river.
The miller's son is swimming he
re
1457 DATA 35,36,0,0
1459 DATA by some shrubs.,35,0,0,0
1460 DATA in a large meadow.,37,37,37
,37
1462 DATA on a footpath outside a cot
tage.,0,39,0,0
1464 DATA inside the doorway of the O
GRE'S cottage. The EVIL OGRE is h
ere
1466 DATA 38,0,0,0
1468 DATA in a large kitchen full of f
ood.,39,0,0,41
1469 DATA in a passage.,42,0,40,43
1470 DATA in a large living room.,0,4
1,0,0
1472 DATA at the entrance to the hous
e.,0,0,41,44
1474 DATA by the Ogre's cottage. The
miller's son; princess and King awai
t
1476 DATA 0,0,43,0
1480 DATA seated in the banquet hall
with the King; princess & Miller's s
on
1482 DATA 0,0,0,0
1484 DATA riding in the royal carriage
with the King; princess & miller's s
on
1486 DATA 0,0,0,0
1488 DATA in a stationary carriage.,0
,0,48,0
1490 DATA outside the village church,
,49,0,0,47
1493 DATA walking down the aisle. I h
ope I remembered the ring !
1495 DATA 0,48,0,50
1496 DATA at the altar. The King; the
princess and the miller's son are he
re
1498 DATA 0,0,49,0
1500 DATA at the wedding,0,0,0,0
1510 REM ** GET ROUTINE
1520 K=1
1522 GOSUB 1790
1530 IFL<>1 THEN RETURN
1540 EX=0
1550 FORH=1 TO 16
1555 IFB*(H,1)=P*ANDB*(N*(R),1)=P*THE
NEX=1
1560 NEXT
1570 IFE*=0 THEN PRINT CHR$(130)"I don't
see it here!":PING:K=1:RETURN
1580 IFR=1 OR R=2 THEN PRINT CHR$(134)"Do
you have to be so stupid?":K=1:RETURN
1590 IFR=11 THEN X$(1)="I cut myself to
death!":F=FREC(""):GOSUB 2230
1600 IFR=12 THEN PRINT CHR$(130)"Not lik
ely!!!":K=1:RETURN
1610 IF(R=18 OR R=19) THEN U#=1
1620 IFR=5 THEN A#=1
1630 IFR=6 OR R=7 THEN AC=1
1640 IFR=8 THEN AD=1
1650 IFR=8 AND SA=0 THEN W#=W#+1:SA=1
1660 IFR=9 THEN GOSUB 3190:IFAE<>1 THEN RE

```


PUSS IN BOOTS

TURN

```

1670 IFR=10ANDAD<>1THENPRINTCHR$(130)
"I need"CHR$(134)"a bag to catch it in
"
1673 IFR=10ANDAD<>1THENRETURN
1675 IFR=10THENAF=1
1680 IFR=22THENAG=1
1690 IFR=14THENPRINTCHR$(131)"I'd nee
d a spade to do that!";RETURN
1700 IFR=13THENAH=1
1710 IFR=15ORR=16THENPRINT"DON'T BE A
DUM DUM!";K=1:RETURN
1720 IFP=21AND(R=3ORR=4)ANDAA<>1THEN
PRINTCHR$(131)"The assistant won't let
me"
1722 IFP=21AND(R=3ORR=4)ANDAA<>1THEN
K=1:RETURN
1730 IFR=3ORR=4THENAB=1
1740 EX=0
1742 FORD=1TO3
1745 IFV$(D)=" "THENV$(D)=G$(N$(R)):EX
=1:D=6
1750 NEXT
1755 IFEX=0THENPRINT"I'm sorry my han
ds are full!";K=1:RETURN
1770 B$(N$(R),1)=0:K=1:RETURN
1780 REM ** CHECK IF ITEM THERE **
1790 L$=""
1795 FORH=1TOLEN(Z$)
1800 IF MID$(Z$,H,1)=" "THENL$=RIGHT$
(Z$, (LEN(Z$)-H)):H=H+40
1810 NEXT H
1815 R=0:LX=0
1820 IF LEN(L$)<2THENRETURN
1825 FORH=1TO27
1830 IFLEFT$(N$(H),LEN(L$))=L$ THENLX
=1:R=H
1835 NEXT
1840 RETURN
1860 REM DROP ROUTINE
1870 GOSUB1790
1880 IFLX<>1THENPRINT"I can't see a "
;L$:K=1:RETURN
1885 EX=0
1890 FORD=1TO3
1900 IFV$(D)=G$(N$(R)) THENV$(D)=" ":E
X=1
1910 NEXT
1930 IFEX<>1THENPRINTI haven't got a
";L$:K=1:RETURN
1940 B$(N$(R),1)=P$
1950 CLS
1960 IFR=5THENAA=0
1970 IF(R=18ORR=19)THENIJ=0
1980 IFR=3ORR=4THENAB=0
1990 IFR=6ORR=7THENAC=0

```

```

2000 IFR=8THENAD=0
2010 IFP=17ANDR=10ANDSB=0THENGOSUB33
30
2020 IFAF=1ANDR=10THENAF=0
2030 IFR=22THENAG=0
2040 IFR=13THENAH=0
2050 K=1
2055 RETURN
2060 REM ** INVENTORY ROUTINE **
2070 PRINTCHR$(135);"I have :-"
2080 PRINTCHR$(134);AQ$
2090 F=0
2100 FOR H=1TO3
2110 IFV$(H)<>" "THENPRINTU$(H):F=1
2120 NEXT
2130 IFF=0THENPRINT"Not a thing !"
2140 PRINT
2150 K=1:RETURN
2160 REM ** KISS ROUTINE
2170 K=1
2172 PRINTCHR$(134)"UGHHH cat's are
not fond of kissing";CHR$(135)"HUMANS.
"
2174 RETURN
2180 REM ** GIVE ROUTINE **
2190 K=1
2195 PRINTCHR$(131);"There's not much
I want to give away!";RETURN
2200 REM ** DESTROY/KILL/ATTACK
2210 K=1:IFP<>103THENPRINT"NOT HERE
& NOW!";K=1:RETURN
2220 REM ** LOSE GAME ROUTINE
2230 CLS
2240 RESTORE
2250 FORX=1TO2
2260 PLOT1,X,X:PLOT2,X,14:PLOT5,X,"TH
AT'S DONE IT !!!!!!!!!"
2270 NEXT
2280 PRINT:PRINT:PRINT:PRINT:PRINT:PR
INT:PRINT
2285 PRINTX$(1)
2290 PRINT:PRINT:PRINT:PRINTCHR$(131)
"The KING is very SAD to see me lose
my life"
2300 FORT=1TO34:READX
2302 MUSIC1,3,X,0
2304 PLAY1,0,4,500
2306 WAIT10
2308 NEXT
2310 PLAY 0,0,0,0
2320 PRINT:PRINT:PRINT
2322 PRINTCHR$(131)"Do you want anoth
er game ? <Y/N>"
2330 REPEAT
2335 GETA$
2340 UNTILA$="Y"ORA$="N"

```

PUSS IN BOOTS

```

2350 IFA$="Y"THEN RUN
2360 PRINT:PRINT"THANK YOU FOR PLAYIN
G!"
2365 END
2390 REM** PRAY / CRY ROUTINE **
2400 K=1
2405 ZAP:WAIT10:PING
2410 IFP<28 THENPRINTCHR$(134)"Nothi
ng happens!":RETURN
2420 IFA<>0THENPRINT"I CAN ONLY GET
TRANSPORTED TWICE!"
2430 IFA<>2THENRETURN
2440 PING:WAIT10:ZAP
2450 IFP<28ANDAX<>2THENAX=AX+1:P<49
:PRINT"WOW I'VE BEEN TRANSPORTED!":RE
TURN
2470 P<28
2480 IFA<2THENPRINTCHR$(129)"WOW I'v
e been transported!":S<28,1)=0
2485 IFA<2THENQ<28)="In an empty ch
amber. The door North is locked."
2486 FF=FRE(""):REM GARBAGE COLLECTIO
N
2490 AX=AX+1
2500 RETURN
2510 REM ** SEARCH ROUTINE **
2520 K=1
2522 PRINTCHR$(132)"I can't see anyt
hing special!"
2530 RETURN
2540 REM ** SCORE SUBROUTINE
2550 PRINTCHR$(129)"You have scored "
;W<:" out of 10"
2560 RETURN
2570 REM ** HELP ROUTINE
2580 K=1
2590 IFP<21THENPRINT"The shop assist
ant is not there to give it away!":
RETURN
2600 IFP<39THENPRINTCHR$(129);"Why n
ot ask the Ogre if he can turn"
2606 IFP<39THENPRINTCHR$(129)"into";
CHR$(131);"SOMETHING!":RETURN
2610 IFP<37THENPRINTCHR$(129)"The me
adow is so large that I will "
2615 IFP<37THENPRINTCHR$(131)"need t
o RUN if I am to get anywhere":RETURN
2620 IFP<12THENPRINTCHR$(129);"I do
believe that rabbits are fond of"
2625 IFP<12THENPRINTCHR$(131)"lettuc
e!":RETURN
2630 IFP<20RP<4THENPRINTCHR$(130);"
Why not go in ?COS:RETURN
2640 IFP<21THENPRINT"Why not go OUT?
":RETURN
2650 IFP<220RP<9THENPRINT"I'd go DO
WN !":RETURN
2660 IFP<80RP<18THENPRINT"Why not g
o UP ?":RETURN
2670 IFP<46THENPRINT"There's nothing
much to do here exceptWAIT!":RETURN
2680 IFP<14THENPRINT"The guard will
not let me go in if I"
2685 IFP<14THENPRINT"don't bear a gi
ft for the King!":RETURN
2690 IFP<17THENPRINT"The King is ver
y fond of PARTRIDGES":RETURN
2700 IFP<44THENPRINT"Why not"CHR$(13
1)"ENTERTAIN"CHR$(129)"the King"
2705 IFP<44THENPRINT"as your guest i
n the Ogre's cottage."
2706 IFP<44THENPRINTCHR$(131);"Who k
nows what might happen?":RETURN
2710 IFP<13THENPRINTCHR$(129)"The gu
ards only let visitors with"
2714 IFP<13THENPRINTCHR$(131);"GIFTS
"CHR$(129)"of"CHR$(131)"RABBITS"CHR$(1
31)"in"
2715 IFP<13THENRETURN
2720 IFP<45THENPRINT"The Miller's so
n seems to be getting "
2722 IFP<45THENPRINT"on well with th
e beautiful Princess."
2725 IFP<45THENPRINT"I think I'd Jus
t WAIT around awhile!"
2727 IFP<45THENRETURN
2730 IFP<35THENPRINT"The King will b
e riding by shortly!"
2735 IFP<35THENPRINT"Why not hide th
e clothes?":RETURN
2740 IFP<36THENPRINTCHR$(131)"Those
BUSHES look good for hiding"
2745 IFP<36THENPRINTCHR$(131)"things
in!":RETURN
2750 IFP<28THENPRINTCHR$(129);"A WED
DING RING would come in useful!":RETU
RN
2760 IFP<50THENPRINT"When I forget s
omething I often"CHR$(131)"PRAY !"
2765 IFP<50THENRETURN
2770 IFP<30THENPRINT"Dont touch the
KNIFE!":RETURN
2771 IFP<66THENPRINT"The Princess Li
kes chocolates!":RETURN
2780 IFP<33THENPRINTCHR$(129);"Have
you remembered the KEY?"
2785 IFP<33 THEN RETURN
2790 PRINT"I'm sorry I don't have a c
lue":RETURN
2800 REM ** PUSH ROUTINE
2810 K=1
2820 PRINTCHR$(135)"Do you always hav

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PUSS IN BOOTS

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e to be so silly?"
2825 RETURN
2830 REM ** JUMP ROUTINE
2840 K=1
2845 PRINTCHR$(133)"Not likely! I might break my neck!":RETURN
2850 REM ** WAIT ROUTINE
2860 K=1
2865 PRINTCHR$(134);"O.K."
2866 WAIT 70
2870 IFP%=46THENPRINT"O.K. The carriage comes to rest and they all get out."
2872 IFP%=46 THEN P%=47:RETURN
2880 IFP%=45THENPRINT"Well that seems to have done the trick"
2882 IFP%=45THENPRINT"The Miller's son proposes marriage to "
2884 IFP%=45THENPRINT"the beautiful Princess and she accepts"
2886 IFP%=45THENPRINT"The King puts me into a carriage"
2888 IFP%=45THENP%=46:RETURN
2890 PRINT"NOTHING SPECIAL HAPPENS":RETURN
2900 REM ** RUN ROUTINE
2910 K=1:IFP%<>37THENPRINTCHR$(131)"I'm too tired to run!":RETURN
2920 P%=38
2922 PRINTCHR$(129)"O.K. I run as fast as I can!"
2925 W%=W%+1:RETURN
2930 REM ** VISIT BY ROYALTY **
2935 K=1
2940 PRINTCHR$(131);"His Royal highness has come to visit"
2945 PRINTCHR$(130)"me in the Ogre's cottage which I have"
2950 PRINTCHR$(129)"taken over now that the Ogre is dead!"
2951 PRINTCHR$(134);"He seems puzzled!!!"
2955 PRINTCHR$(133);"and keeps on muttering 'CATS CAN'T "
2957 PRINTCHR$(133);"TALK.....can they?"
2960 RETURN
2970 REM ** WEAR ROUTINE
2980 K=1
2990 IFAB=1THENPRINT"O.K. I will wear the boots!"
2995 IFAB=1THENFORH=1TO3:IFV$(H)="a pair of boots"THENV$(H)=" "
3000 IFAB=1THEN NEXT:AO$="a pair of boots:- worn plus"
3004 IFAB=1THENAB=3:S$(11,3)=12:W%=W%+1:RETURN
3010 PRINTCHR$(131)"NOT YET !!!!!!!!!":RETURN
3050 REM ** PREVENT PLAYER INSULTING COMPUTER
3060 CLS:K=1
3065 FORX=1TO2
3070 PLOT0,X,X:PLOT1,X,14:PLOT2,X,"HOW DARE YOU SPEAK TO ME LIKE THAT!"
3075 NEXT
3080 WAIT 200
3090 X$(1)="The King's soldiers arrest me for using foul language"
3100 ZAP:WAIT 10:PING
3110 FF=FRE(""):REM GARBAGE COLLECTION AFTER CHANGING VARIABLE
3120 GOTO2230
3130 DATA A shop assistant,21
3131 DATA a pair of boots,21
3132 DATA some coins,10
3133 DATA some lettuce leaves,7
3134 DATA an old bag,9
3135 DATA a fat rabbit,12
3136 DATA a partridge,20
3137 DATA a rusty knife,30
3138 DATA a dead rat,25
3139 DATA the miller's sons clothes,35
3140 DATA some bushes,36
3141 DATA the EVIL OGRE,39
3142 DATA some food,42
3143 DATA a gold wedding ring,28
3144 DATA the palace guard,13
3145 DATA a key,29
3160 DATA SHOP,1,ASSISTANT,1,PAIR,2,BOOTS,2
3161 DATA COINS,3,LETTUCE,4,LEAVES,4,BAG,5,RABBIT,6,PARTRIDGE,7
3162 DATA KNIFE,8,RAT,9,CLOTHES,10
3163 DATA BUSHES,11,OGRE,12,EVIL,12
3164 DATA FOOD,13,WEDDING,14,RING,14
3170 DATA PALACE,15,GUARD,15,KEY,16
3180 REM ** CATCH RABBIT ROUTINE **
3190 K=1
3200 IFAE=1THENRETURN
3210 IFAC<>1THENPRINTCHR$(134)"I need something to entice the rabbit"
3220 IFAD<>1THENPRINTCHR$(134)"I need a bag to catch it with!"
3230 IF(AC=1ANDAD=1)THENPRINTCHR$(131)"I put some lettuce leaves in the bag"
3232 IF(AC=1ANDAD=1)THENPRINTCHR$(131)"and the rabbit rushes over!"
3234 IF(AC=1ANDAD=1)THENPRINTCHR$(130)"I quickly trap the rabbit!":AE=1

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PUSS IN BOOTS

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3240 IF AE=1 THEN S$(13,2)=14:Q$(13)=LEFT$(Q$(13),21):F=FRE(""):RETURN
3244 RETURN
3260 REM ** GIFT ROUTINE
3270 K=1:W$=W$+1:AE=0:FOR X=1 TO 3
3272 IF U$(X)="a fat rabbit" THEN U$(X)="":FF=FRE(" ")
3280 NEXT
3290 PRINT CHR$(129)"The guard takes my gift from me and goes to show the King!"
3300 PRINT CHR$(130)"He is very pleased and asks for a "CHR$(129)"PARTRIDGE"
3310 RETURN
3320 REM ** GIFT ROUTINE
3330 K=1
3335 IF A$<>1 THEN PRINT "I don't have it to give!":RETURN
3340 PRINT CHR$(134)"The King thanks me and calls his dogs"
3342 PRINT CHR$(134)"out of the way to let me pass."
3345 S$(17,3)=30
3350 SB=1
3360 W$=W$+1
3363 Q$(17)=LEFT$(Q$(17),22):F=FRE("")
)
3365 RETURN
3370 REM ** UNLOCK ROUTINE **
3380 K=1
3385 IF P$<>33 THEN PRINT CHR$(132)"Not here!":RETURN
3390 IF A$<>1 THEN PRINT CHR$(135)"I need the key!":RETURN
3400 PRINT "O.K. The gate is now unlocked"
3402 Q$(33)="by an open gate."
3404 S$(33,2)=34
3406 W$=W$+1
3408 RETURN
3410 REM ** HIDE ROUTINE
3420 K=1
3422 IF P$<>36 THEN PRINT CHR$(131)"I can't hide anything here!":RETURN
3430 IF A$<>1 THEN PRINT "I haven't got anything worth hiding!":RETURN
3440 FOR X=1 TO 3
3450 IF U$(X)=G$(10) THEN U$(X)=" "
3455 NEXT
3456 AH=0:W$=W$+1
3460 PRINT "The King rides past your master (the"
3462 PRINT "Miller's son) and see that he is"
3464 PRINT "in distress. He takes your

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```

master for"
3466 PRINT "a ride in the Royal carriage and you"
3468 PRINT "run on ahead."
3470 K=1:P$=37:RETURN
3480 REM ** TALK ROUTINE
3490 K=1
3495 IF P$<>39 THEN PRINT "NOT HERE !!!":RETURN
3500 IF S$<>0 THEN PRINT "Nothing happens!":RETURN
3510 CLS
3515 PRINT CHR$(129)"O.K. I ask the OGRE if he can turn into something else."
3520 PRINT:PRINT:PRINT CHR$(131);"He says ' OF COURSE I CAN!' "
3530 SD=1
3540 PRINT CHR$(130);"What would you like me to turn into?"
3550 PRINT:PRINT:INPUT Z$:C$=LEFT$(Z$,3)
3560 IF C$<>"MOU" THEN X$(1)="He turns into a TIGER and devours me":GOTO 2230
3570 CLS:PRINT CHR$(131)"The Ogre turns into a tiny mouse!"
3580 PRINT:PRINT:PRINT CHR$(129);"I pounce upon it and kill it !!!"
3585 G$(12)="A dead mouse"
3586 S$(39,2)=40
3587 W$=W$+1
3590 N$(15)="MOUSE":N$(16)="DEAD"
3600 Q$(39)=LEFT$(Q$(39),46)
3605 FF=FRE(""):REM GARBAGE COLLECTION AFTER CHANGING VARIABLES IN ARRAYS
3610 RETURN
3620 REM ** ENTERTAIN KING & GUESTS *
*
3630 K=1
3640 IF P$<>44 THEN PRINT CHR$(129)"Don't be silly!!!"
3644 IF P$<>44 THEN RETURN
3650 W$=W$+1
3655 P$=45
3660 PRINT CHR$(131)"O.K."
3670 PRINT CHR$(129)"I invite the King and his daughter "
3680 PRINT CHR$(129)"into the OGRE's cottage. The Ogre's"
3690 PRINT CHR$(129)"servants provide a slap up meal and"
3700 PRINT CHR$(129)"the King is most impressed!"
3710 PRINT CHR$(131)"He must think my master provided it!!!"
3720 RETURN

```


PUSS IN BOOTS

```

3730 DATA a ham sandwich,9,SANDWICH,a
rusty nail,55,NAIL
3740 DATA an old file,23,FILE,a cup o
f tea,56,TEA
3750 DATA a golden crucifix,7,CRUCIFI
X,a brass ornament,44,ORNAMENT
3760 DATA An old brush,45,BRUSH,an ol
d lady,37,LADY
3770 DATA a candle,23,CANDLE
3780 DATA a diamond tiara,67,TIARA
3790 DATA an oil can,28,OIL,a tin of
cat food,63,FOOD
3800 DATA a firelighter,5,FIRELIGHTER
,a box of matches,6,BOX
3810 REM ** DON'T BE SILLY
3820 K=1
3830 CLS
3840 FORX=1TO2:PLOT1,X,X:PLOT2,X,14
3850 PLOT10,X,"Don't be silly!!!!"
3860 NEXT
3870 FORX=1TO3
3880 ZAP:WAIT15
3890 NEXT
3900 RETURN
4900 END
4999 REM ** INSTRUCTIONS **
5000 GOSUB 5500
5005 FORX=3TO4:PLOT0,X,X:PLOT1,X,14:P
LOT13,X,"Puss in Boots":NEXTX
5010 FOR X = 5 TO 17:PLOT0,X,7:NEXT
5015 PLOT2,8,"Once upon a time there
was a miller"
5020 PLOT2,9,"who had three sons. He
was so poor"
5025 PLOT2,10,"that when he died he l
eft nothing"
5030 PLOT2,11,"but his mill, his donk
ey and his cat."
5032 PLOT1,17,6:PLOT10,17,"<C> S.W. L
ucas 1984"
5035 RESTORE
5040 FOR T= 1 TO 34:READ X
5050 MUSIC1,3,X,0
5060 PLAY1,0,4,500
5070 WAIT10
5080 NEXT
5090 PLAY0,0,0,0
5200 PLOT0,26,1:PLOT6,26,"Press <Spac
e Bar> to continue"

```

```

5210 REPEAT
5220 GETG$
5230 UNTIL G$="
5240 GOSUB 5500
5250 FOR X=5 TO 15:PLOT0,X,6:NEXT
5260 PLOT2,5,"The mill, of course, ha
d to be left"
5270 PLOT2,6,"to his eldest son, the
donkey to his"
5280 PLOT2,7,"second and all that was
left for the"
5290 PLOT2,8,"youngest son was his fa
thers cat."
5300 PLOT2,10,"'Do not worry, dear ma
ster' said the"
5310 PLOT2,11,"cat,'give me a pair of
boots and a "
5320 PLOT2,12,"bag and I shall solve
all your "
5340 PLOT2,13,"problems!"
5350 PLOT0,26,1:PLOT6,26,"Press <Spac
e Bar> to continue"
5360 REPEAT:GETG$:UNTILG$=" ":CLS:GOS
UB5500
5370 FORX=5TO15:PLOT0,X,2:NEXT
5380 PLOT2,5,"My name is PUSS and you
are the "
5390 PLOT2,6,"youngest son of the mil
ler. You must"
5400 PLOT2,7,"help me to help you !"
5410 PLOT2,9,"This game follows the f
airy story "
5420 PLOT2,10,"Very closely and you a
re advised to"
5430 PLOT2,11,"read it if you get stu
ck !"
5440 PLOT1,17,5:PLOT10,17,"<C> S.W. L
ucas 1984"
5450 PLOT0,26,1:PLOT6,26,"Press <Spac
e Bar> to continue"
5460 REPEAT:GETG$:UNTILG$=" ":CLS:RET
URN
5499 REM ** GRAPHICS **
5500 CLS:FOR X=0 TO 1:PLOT0,X,3:PLOT1
,X,9:PLOT0,X+20,3:PLOT1,X+20,9
5510 FOR A =2 TO 38 :PLOT0,X,"G":PLOT
A,X+20,"F"
5520 NEXTA,X
5530 RETURN

```

MUSIC TUTOR 1

```

3 PAPER7
4 P=PEEK(#26A):POKE#26A,P OR 8
5 REM AURAL 3 NOTATION (C) A.M.THOM 1
983
6 HIRES :PAPER 3           :INK 0
7 GOSUB 500
10 GOSUB 1000
20 GOSUB2000
30 END
500 CURSET20,10,3
501 NA$="NOTE READING**TREBLE CLEF**"
502 FORA=1 TO LEN(NA$)
503 CHAR ASC(MID$(NA$,A,1)),0,1
504 CURMOV 8 ,0,0
506 NEXT
507 CURSET 15,1 ,3
508 NA$="(C) A.M.THOM 1/11/83 "
509 FOR A=1 TO LEN(NA$)
510 CHAR ASC(MID$(NA$,A,1)),0,1
512 CURMOV 6,0,0
513 NEXTA
514 RETURN
1000 CLS
1025 REPEAT
1026 M=M+1
1027 FOR X=1 TO 12
1028 MUSIC 1,2,X,15
1029 MUSIC2,3,X,15
1030 MUSIC3,4,X,15
1031 PLAY7,0,0,0
1032 NEXTX
1033 UNTIL M=3:PLAY0,0,0,0
1090 PRINT"If you get stuck on a note
press H for Help! Press a key to star
t
1095 GETA$
1135 RETURN
2000 ZAP:ZAP:ZAP
2020 CURSET 0,40,1
2030 DRAW 239,0 ,1
2040 CURSET 239,50,1
2050 DRAW -239,0, 1
2060 CURSET 0, 60 ,1
2070 DRAW 239,0 ,1
2080 CURSET 239,70,1
2090 DRAW -239,0 ,1
2100 CURSET 0,80,1
2110 DRAW 239,0,1
2500 CURSET25,70,1
2510 CIRCLE9,1
2520 CURSET15, 70,1
2530 DRAW20,-45,1
2540 DRAW-5,-5,1

2550 DRAW-5,5,1
2560 DRAW0,65,1
2570 DRAW-4,4,1
2590 DRAW-4,-4,1
3004 CLS
3020 FOR A=1 TO INT (RND(1)*10)+1
3025 G=0
3030 READB ,AN$,0,N
3032 NEXTA
3033 REPEAT
3034 Z=Z+1
3037 G=G+1
3038 IFZ=1 THENX=40
3039 MUSIC1,0,N,0:PLAY1,0,1,5000
3040 CURSET X ,B,1
3050 CHAR79,0,1
3060 PRINT"What is this note?"
3061 IF G>2 THEN PRINT" (Try ";AN$;"
;)"
3062 GETA$:CLS
3065 RESTORE
3066 PLAY0,0,0,0
3068 IF A$="H"THEN GOSUB4000
3070 IFA$=AN$THENPING:SC=SC+1:PRINT"C
orrect,you have got ";SC;" right"
3071 IF SC=10 AND Z=10 THEN GOSUB9000
3072 IFA$<>AN$THENEXPLODE:PRINT"Wrong
,try again"
3073 WAIT200:CLS
3074 UNTILA$=AN$
3075 IFX=202 THEN GOTO 9100
3076 CURSETX,B,1
3077 CHAR32,0,1
3079 X=X+18
3080 GOTO 3020
3090 RETURN
4000 CLS:PRINT"Here are the names of
the notes":ZAP
4025 PAPER3:INK0
4040 CURSET 0,130,1
4050 DRAW 239,0 ,1
4060 CURSET 239,140,1
4065 DRAW -239,0,1
4070 CURSET 0,150,1
4080 DRAW 239,0 ,1
4090 CURSET 239,160,1
4100 DRAW -239,0 ,1
4200 CURSET 0,170,1
4210 DRAW 239,0,1
4220 CURSET25,160,1
4230 CIRCLE9,1
4240 CURSET15,160,1
4250 DRAW20,-45,1

```

MUSIC TUTOR 1

```

4260 DRAW-5,-5,1
4270 DRAW-5,5,1
4280 DRAW0,65,1
4290 DRAW-4,4,1
4300 DRAW-4,-4,1
4310 CURSET 40,172,1
4320 H$="000000000000"
4330 FORA=1 TO LEN(H$)
4340 CHARASC(MID$(H$,A,1)),0,1
4350 CURMOV18,-5,1
4360 NEXTA
4370 CURSET 40,185,1
4380 HN$="DEFGABCDEFGF"
4390 FORA=1 TO LEN(HN$)
4400 CHAR ASC(MID$(HN$,A,1)),0,1
4410 CURMOV 18,0,1
4420 NEXTA
4425 WAIT 100:CLS
4980 GOTO3033
5000 RETURN
8006 DATA 32,"G",4,8
8007 DATA 37,"F",4,6
8008 DATA 42,"E",4,5
8009 DATA 47,"D",4,3
8010 DATA 52,"C",4,1
8011 DATA 57,"B",3,12
8012 DATA 62,"A",3,10
8013 DATA 67,"G",3,8
8014 DATA 72,"F",3,6
8015 DATA 77,"E",3,5
8016 DATA 82,"D",3,3
9000 CLS:PAPER1:TEXT
9005 PLOT 1,9,23:PLOT 1,10,23:PLOT8,
9,14:PLOT 8,10,14
9007 PLOT 10,9,"BRILLIANT"
9008 PLOT 10,10,"BRILLIANT"
9009 PLOT1,12,23:PLOT2,12,"YOU GOT IT
ALL RIGHT,WITH NO HELP"
9010 REPEAT
9020 M=M+1
9030 FOR N=100 TO 105
9035 PAPER INT(RND(1)*6)+1
9040 SOUND 1,N,15
9050 SOUND 2,N-10,15
9060 SOUND 3,N-20,15
9070 PLAY 7,0,0,0
9080 NEXTN
9090 UNTILM=10:PLAY0,0,0,0
9100 FOR X=1 TO 50
9200 SOUND1,X,15
9300 SOUND 2,X+5,15
9400 SOUND 3,X+10,15
9500 PLAY7,1,0,0
9600 NEXT X
9605 PAPER7
9700 PLAY0,0,0,0:RUN

```

MUSIC TUTOR 2

```

4 P=PEEK(#26A):POKE#26A,P OR 8
5 REM AURAL 3 NOTATION (C) A.M.THOM 1
983
6 HIRES :PAPER 3 :INK 0
7 GOSUB 500
10 GOSUB 1000
20 GOSUB2000
30 END
500 CURSET20,10,3
501 NA$="NOTE READING*TREBLE CLEF*LEG
ER"
502 FORA=1 TO LEN(NA$)
503 CHAR ASC(MID$(NA$,A,1)),0,1
504 CURMOV 7,0,0
506 NEXTA
507 CURSET 15,1,3
508 NA$="(C) A.M.THOM 1/11/83 "
509 FOR A=1 TO LEN(NA$)
510 CHAR ASC(MID$(NA$,A,1)),0,1
512 CURMOV 6,0,0
513 NEXTA
514 RETURN
1000 CLS
1025 REPEAT
1026 M=M+1
1027 FOR X=1 TO 12
1028 MUSIC 1,2,X,15
1029 MUSIC2,3,X,15
1030 MUSIC3,4,X,15
1031 PLAY7,0,0,0
1032 NEXTX
1033 UNTIL M=3:PLAY0,0,0,0
1090 PRINT"If you get stuck on a note
press'H'for HELP.Press a key to start
"
1095 GETA$
1135 RETURN
2000 ZAP:ZAP:ZAP
2020 CURSET 0,40,1
2030 DRAW 239,0,1
2040 CURSET 239,50,1
2050 DRAW -239,0,1
2060 CURSET 0,60,1
2070 DRAW 239,0,1
2080 CURSET 239,70,1
2090 DRAW -239,0,1
2100 CURSET 0,80,1
2110 DRAW 239,0,1
2500 CURSET25,70,1
2510 CIRCLE9,1
2520 CURSET15,70,1
2530 DRAW20,-45,1
2540 DRAW-5,-5,1
2550 DRAW-5,5,1
2560 DRAW0,65,1
2570 DRAW-4,4,1

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MUSIC TUTOR 2

```

2590 DRAW-4,-4,1
3004 CLS
3020 FOR A=1 TO INT (RND(1)* 8 )+1
3025 G=0
3030 READB,C,D,AN$,O,N
3032 NEXTA
3033 REPEAT
3036 Z=Z+1
3037 G=G+1
3038 IFZ=1 THENX=40
3039 MUSIC1,O,N,0:PLAY1,0,1,5000
3040 CURSET X ,B,1
3050 CHAR79,0,1
3051 CURSET X-2,C,1
3052 DRAW 8,0,1
3053 CURSET X-2,D,1
3054 DRAW 8,0,1
3060 PRINT"What is this note?"
3061 IF G>2 THENPRINT" (Try ";AN$;"?
)"
3062 GETA$:CLS
3065 RESTORE
3066 PLAY0,0,0,0
3068 IF A$="H"THEN GOSUB4000
3070 IFA$=AN$THENPING:SC=SC+1:PRINT"C
orrect,you have got ";SC;" right"
3071 IF SC=10 AND Z=10 THEN GOSUB9000
3072 IFA$<>AN$THENEXPLODE:PRINT"Wrong
,try again"
3073 WAIT200:CLS
3074 UNTILA$=AN$
3075 IFX=202 THEN GOTO 9100
3076 CURSETX,B,1
3077 CHAR32,0,1
3079 X=X+18
3080 GOTO 3020
3090 RETURN
4000 CLS:PRINT"here are the names of
the notes": ZAP
4010 CURSET 12,100,1
4012 L$="*****"
4014 FOR A=1 TO LEN(L$)
4016 CHAR ASC(MID$(L$,A,1)),0,1
4018 CURMOV 7,0,1
4019 NEXTA
4040 CURSET 0,130,1
4050 DRAW 239,0 ,1
4060 CURSET 239,140,1
4065 DRAW -239,0,1
4070 CURSET 0,150,1
4080 DRAW 239,0 ,1
4090 CURSET 239,160,1
4100 DRAW -239,0 ,1
4200 CURSET 0,170,1
4210 DRAW 239,0,1
4220 CURSET25,160,1
4230 CIRCLE9,1
4240 CURSET15,160,1
4250 DRAW20,-45,1
4260 DRAW-5,-5,1
4270 DRAW-5,5,1
4280 DRAW0,65,1
4290 DRAW-4,4,1
4300 DRAW-4,-4,1
4310 CURSET 40,122 ,1:DRAW 9,0,1
4311 CURMOV 9,0,1:DRAW9,0,1
4312 CURMOV 9,0,1:DRAW9,0,1
4313 CURMOV 9,0,1:DRAW9,0,1
4315 CURSET 40,116,1:DRAW 9,0,1
4317 CURMOV 9,0,1:DRAW 9,0,1
4320 CURSET 42,110,1:CHAR79,0,1
4321 CURMOV18,3,1:CHAR79,0,1
4322 CURMOV 18,3,1:CHAR79,0,1
4323 CURMOV 18,3,1:CHAR79,0,1
4370 CURSET 40,185,1
4380 HN$="DCBA"
4390 FORA=1TO LEN(HN$)
4400 CHAR ASC(MID$(HN$,A,1)),0,1
4410 CURMOV 18,0,1
4420 NEXTA
4430 CURSET150,116,1
4431 HN$="CBAG"
4432 FORA=1 TO LEN(HN$)
4433 CHAR ASC(MID$(HN$,A,1)),0,1
4434 CURMOV 18,0,1
4435 NEXTA
4440 CURSET150,180,1:DRAW9,0,1
4441 CURMOV 9,0,1:DRAW 9,0,1
4442 CURMOV 9,0,1:DRAW 9,0,1
4443 CURMOV 9,0,1:DRAW 9,0,1
4450 CURSET186,186,1:DRAW9,0,1
4451 CURMOV 9,0,1:DRAW9,0,1
4460 CURSET 152,177,1:CHAR79,0,1
4461 CURMOV18,3,1:CHAR 79,0,1
4462 CURMOV18,3,1:CHAR 79,0,1
4463 CURMOV18,3,1:CHAR 79,0,1
4900 CURSET0,100,1
4910 WAIT100:CLS
4950 GOTO3033
5000 RETURN
8006 DATA 22,28,34,"D",5,3
8007 DATA 25,28,34,"C",5,1
8008 DATA 28,34,40,"B",4,12
8009 DATA 31,34,40,"A",4,10
8010 DATA 83,86,40,"C",3,1
8011 DATA 86,86,40,"B",2,12
8012 DATA 89,92,86,"A",2,10

```


MUSIC TUTOR 2

```

8013 DATA 92,92,86,"G",2,8
9000 CLS:PAPER1:TEXT
9005 PLOT 1,9,23:PLOT 1,10,23:PLOT 8,
9,14:PLOT 8,10,14
9007 PLOT 10,9,"BRILLIANT"
9008 PLOT 10,10,"BRILLIANT"
9009 PLOT 1,12,23:PLOT 2,12,"YOU GOT
IT ALL RIGHT WITH NO HELP"
9010 REPEAT
9020 M=M+1
9030 FOR N=100 TO 105
9035 PAPER INT(RND(1)*6)+1
9040 SOUND 1,N,15

```

```

9050 SOUND 2,N-10,15
9060 SOUND 3,N-20,15
9070 PLAY 7,0,0,0
9080 NEXTN
9090 UNTILM=10:PLAY0,0,0,0
9100 FOR X=1 TO 50
9200 SOUND 1,X,15
9300 SOUND 2,X+5,15
9400 SOUND3,X+10,15
9500 PLAY7,1,0,0
9600 NEXT X
9700 PAPER 7
9800 PLAY0,0,0,0:RUN

```

MUSIC TUTOR 3

```

4 P=PEEK(#26A):POKE#26A,P OR 8
5 REM AURAL 3 NOTATION (C) A.M.THOM 1
983
6 HIRES :PAPER 3 :INK 0
7 GOSUB 500
10 GOSUB 1000
20 GOSUB2000
30 END
500 CURSET20,10,3
501 NA$="NOTE READING***BASS CLEF***"

502 FORA=1 TO LEN(NA$)
503 CHAR ASC(MID$(NA$,A,1)),0,1
504 CURMOV 8 ,0,0
506 NEXTA
507 CURSET 15,1 ,3
508 NA$="(C) A.M.THOM 1/11/83 "
509 FOR A=1 TO LEN(NA$)
510 CHAR ASC(MID$(NA$,A,1)),0,1
512 CURMOV 6,0,0
513 NEXTA
514 RETURN
1000 CLS
1025 REPEAT
1026 M=M+1
1027 FOR X=1 TO 12
1028 MUSIC 1,1,X,15
1029 MUSIC2,2,X,15
1030 MUSIC3,3,X,15
1031 PLAY7,0,0,0
1032 NEXTX
1033 UNTIL M=3:PLAY0,0,0,0
1090 PRINT"If you get stuck on a note
press'H'for HELP.Press a key to start

1095 GET A$
1135 RETURN
2000 ZAP:ZAP:ZAP:INK0
2020 CURSET 0,40,1
2030 DRAW 239,0 ,1
2040 CURSET 239,50,1

```

```

2050 DRAW -239,0, 1
2060 CURSET 0, 60 ,1
2070 DRAW 239,0 ,1
2080 CURSET 239,70,1
2090 DRAW -239,0 ,1
2100 CURSET 0,80,1
2110 DRAW 239,0,1
2500 CURSET8,50,1
2510 DRAW 7,-7,1
2520 DRAW 5,0,1
2530 DRAW 7,7,1
2540 DRAW -8,20,1
2550 DRAW -3,2,1
2560 DRAW -7,7,1
2570 CURSET 28,45,1
2580 CURSET 28,55,1
3004 CLS
3020 FOR A=1 TO INT (RND(1)*10)+1
3025 G=0
3030 READB ,AN$,0,N
3032 NEXTA
3033 REPEAT
3036 Z=Z+1
3037 G=G+1
3038 IFZ=1 THENX=40
3039 MUSIC1,0,N,0:PLAY1,0,1,5000
3040 CURSET X ,B,1
3050 CHAR79,0,1
3060 PRINT"What is this note?"
3061 IF G>2 THENPRINT" (Try ";AN$;"!
)"
3062 GETA$:CLS
3065 RESTORE
3066 PLAY0,0,0,0
3068 IF A$="H" THEN GOSUB4000
3070 IFA$=AN$THENPING:SC=SC+1:PRINT"C
orrect,you have got ";SC;" right"
3071 IF SC=10 AND Z=10 THEN GOSUB9000
3072 IFA$<>AN$THENEXPLODE:PRINT"Wrong
,try again"
3073 WAIT200:CLS

```

MUSIC TUTOR 3

```

3074 UNTIL A$=AN$
3075 IF X=202 THEN GOTO 9100
3076 CURSETX,B,1
3077 CHAR32,0,1
3079 X=X+18
3080 GOTO 3020
3090 RETURN
4000 CLS:PRINT"here are the names of
the notes":ZAP
4040 CURSET 0,130,1
4050 DRAW 239,0,1
4060 CURSET 239,140,1
4065 DRAW -239,0,1
4070 CURSET 0,150,1
4080 DRAW 239,0,1
4090 CURSET 239,160,1
4100 DRAW -239,0,1
4200 CURSET 0,170,1
4210 DRAW 239,0,1
4220 CURSET 8,140,1
4230 DRAW 7,-7,1
4240 DRAW 5,0,1
4250 DRAW 7,7,1
4260 DRAW -8,20,1
4270 DRAW -3,2,1
4280 DRAW -7,7,1
4290 CURSET 28,135,1
4300 CURSET 28,145,1
4315 CURSET 40,172,1
4320 H$="000000000000"
4330 FOR A=1 TO LEN(H$)
4340 CHARASC(MID$(H$,A,1)),0,1
4350 CURMOV 18,-5,1
4360 NEXT A
4370 CURSET 40,185,1
4380 HN$="FGABCDEF GAB"
4390 FOR A=1 TO LEN(HN$)
4400 CHAR ASC(MID$(HN$,A,1)),0,1
4410 CURMOV 18,0,1
4420 NEXT A
4910 WAIT 100:CLS
4980 GOTO 3033
5000 RETURN
8006 DATA 32,"B",2,12
8007 DATA 37,"A",2,10
8008 DATA 42,"G",2,8
8009 DATA 47,"F",2,6
8010 DATA 52,"E",2,5
8011 DATA 57,"D",2,3
8012 DATA 62,"C",2,1
8013 DATA 67,"B",1,12
8014 DATA 72,"A",1,10
8015 DATA 77,"G",1,8
8016 DATA 82,"F",3,6
9000 CLS:PAPER 1:TEXT
9005 PLOT 1,9,23:PLOT 1,10,23:PLOT 8,
9,14:PLOT 8,10,14
9007 PLOT 10,9,"BRILLIANT"
9008 PLOT 10,10,"BRILLIANT"
9009 PLOT 1,12,23:PLOT 2,12,"YOU GOT
THEM ALL RIGHT WITH NO HELP"
9010 REPEAT
9020 M=M+1
9030 FOR N=100 TO 105
9035 PAPER INT(RND(1)*6)+1
9040 SOUND 1,N,15
9050 SOUND 2,N-10,15
9060 SOUND 3,N-20,15
9070 PLAY 7,0,0,0
9080 NEXT N
9090 UNTIL M=10:PLAY 0,0,0,0
9100 FOR X=1 TO 50
9200 SOUND 1,X,15
9300 SOUND 2,X+5,15
9400 SOUND 3,X+10,15
9500 PLAY 7,1,0,0
9600 NEXT X
9700 PAPER 7
9800 PLAY 0,0,0,0:RUN

```

MUSIC TUTOR 4

```

4 P=PEEK(#26A):POKE#26A,P OR 8
5 REM AURAL 3 NOTATION (C) A.M.THOM 1
983
6 HIRES :PAPER 3 :INK 0
7 GOSUB 500
10 GOSUB 1000
20 GOSUB 2000
30 END
500 CURSET 20,10,3
501 NA$="NOTE READING**BASS CLEF**LEG
ER"
502 FOR A=1 TO LEN(NA$)
503 CHAR ASC(MID$(NA$,A,1)),0,1
504 CURMOV 7,0,0
506 NEXT A
507 CURSET 15,1,3
508 NA$="(C) A.M.THOM 1/11/83 "
509 FOR A=1 TO LEN(NA$)
510 CHAR ASC(MID$(NA$,A,1)),0,1
512 CURMOV 6,0,0

```

MUSIC TUTOR 4

```

513 NEXTA
514 RETURN
1000 CLS
1025 REPEAT
1026 M=M+1
1027 FOR X=1 TO 12
1028 MUSIC 1,1,X,15
1029 MUSIC2,2,X,15
1030 MUSIC3,3,X,15
1031 PLAY7,0,0,0
1032 NEXTX
1033 UNTIL M=3:PLAY0,0,0,0
1090 PRINT"If you get stuck on a note
press'H'for HELP.Press a key to start
"
1095 GETA$
1135 RETURN
2000 ZAP:ZAP:ZAP
2020 CURSET 0,40,1
2030 DRAW 239,0 ,1
2040 CURSET 239,50,1
2050 DRAW -239,0 ,1
2060 CURSET 0, 60 ,1
2070 DRAW 239,0 ,1
2080 CURSET 239,70,1
2090 DRAW -239,0 ,1
2100 CURSET 0,80,1
2110 DRAW 239,0,1
2500 CURSET8,50,1
2510 DRAW 7,-7,1
2520 DRAW 5,0,1
2530 DRAW 7,7,1
2540 DRAW-8,20,1
2550 DRAW-3,2,1
2560 DRAW-7,7,1
2570 CURSET 28,45,1
2590 CURSET 28,55,1
3004 CLS
3020 FOR A=1 TO INT (RND(1)* 8 )+1
3025 G=0
3030 READB,C,D,AN$,O,N
3032 NEXTA
3033 REPEAT
3036 Z=Z+1
3037 G=G+1
3038 IFZ=1 THENX=40
3039 MUSIC1,O,N,0:PLAY1,0,1,5000
3040 CURSET X ,B,1
3050 CHAR79,0,1
3051 CURSET X-2,C,1
3052 DRAW 8,0,1
3053 CURSET X-2,D,1
3054 DRAW 8,0,1
3060 PRINT"What is this note?"

```

```

3061 IF G>2 THEN PRINT" (Try ";AN$;"
)"
3062 GETA$:CLS
3065 RESTORE
3066 PLAY0,0,0,0
3068 IF A$="H"THEN GOSUB4000
3070 IFA$=AN$THENPING:SC=SC+1:PRINT"C
orrect,you have got ";SC;" right"
3071 IF SC=10 AND Z=10 THEN GOSUB9000
3072 IFA$<>AN$THENEXPLODE:PRINT"Wrong
,try again"
3073 WAIT200:CLS
3074 UNTILA$=AN$
3075 IFX=202 THEN GOTO 9100
3076 CURSETX,B,1
3077 CHAR32,0,1
3079 X=X+18
3080 GOTO 3020
3090 RETURN
4000 CLS:PRINT"here are the names of
the notes": ZAP
4010 CURSET 12,100,1
4012 L$="*****"
****"
4014 FOR A=1 TO LEN(L$)
4016 CHAR ASC(MID$(L$,A,1)),0,1
4018 CURMOV 7,0,1
4019 NEXTA
4040 CURSET 0,130,1
4050 DRAW 239,0 ,1
4060 CURSET 239,140,1
4065 DRAW -239,0,1
4070 CURSET 0,150,1
4080 DRAW 239,0 ,1
4090 CURSET 239,160,1
4100 DRAW -239,0 ,1
4200 CURSET 0,170,1
4210 DRAW 239,0,1
4220 CURSET8,140,1
4230 DRAW 7,-7,1
4240 DRAW 5,0,1
4250 DRAW 7,7,1
4260 DRAW -8,20,1
4270 DRAW -3,2,1
4280 DRAW -7,7,1
4290 CURSET 28,135,1
4300 CURSET 28,145,1
4310 CURSET 40,122 ,1:DRAW 9,0,1
4311 CURMOV 9,0,1:DRAW9,0,1
4312 CURMOV 9,0,1:DRAW9,0,1
4313 CURMOV 9,0,1:DRAW9,0,1
4315 CURSET 40,116,1:DRAW 9,0,1
4317 CURMOV 9,0,1:DRAW 9,0,1
4320 CURSET 42,110,1:CHAR79,0,1

```

MUSIC TUTOR 4

```

4321 CURMOV18,3,1:CHAR79,0,1
4322 CURMOV 18,3,1:CHAR79,0,1
4323 CURMOV 18,3,1:CHAR79,0,1
4370 CURSET 40,185,1
4380 HN$="FEDC"
4390 FORA=1TO LEN(HN$)
4400 CHAR ASC(MID$(HN$,A,1)),0,1
4410 CURMOV 18,0,1
4420 NEXTA
4430 CURSET150,116,1
4431 HN$="EDCB"
4432 FORA=1 TO LEN(HN$)
4433 CHAR ASC(MID$(HN$,A,1)),0,1
4434 CURMOV 18,0,1
4435 NEXTA
4440 CURSET150,180,1:DRAW9,0,1
4441 CURMOV 9,0,1:DRAW 9,0,1
4442 CURMOV 9,0,1:DRAW 9,0,1
4443 CURMOV 9,0,1:DRAW 9,0,1
4450 CURSET186,186,1:DRAW9,0,1
4451 CURMOV 9,0,1:DRAW9,0,1
4460 CURSET 152,177,1:CHAR79,0,1
4461 CURMOV18,3,1:CHAR 79,0,1
4462 CURMOV18,3,1:CHAR 79,0,1
4463 CURMOV18,3,1:CHAR 79,0,1
4910 WAIT300:CLS
4980 GOTO3033
5000 RETURN
8006 DATA 22,28,34,"F",3,6
8007 DATA 25,28,34,"E",3,5
8008 DATA 28,34,40,"D",3,3
8009 DATA 31,34,40,"C",3,1
8010 DATA 83,86,40,"E",1,5
8011 DATA 86,86,40,"D",1,3
8012 DATA 89,92,86,"C",1,1
8013 DATA 92,92,86,"B",0,12
9000 CLS:PAPER1:TEXT
9005 PLOT 1,9,23:PLOT 1,10,23:PLOT 8,
9,14:PLOT 8,10,14
9007 PLOT 10,9,"BRILLIANT"
9008 PLOT 10,10,"BRILLIANT"
9009 PLOT 1,12,23:PLOT 2,12,"YOU GOT
THEM ALL RIGHT WITH NO HELP"
9010 REPEAT
9020 M=M+1
9030 FOR N=100TO 105
9035 PAPER INT(RND(1)*6)+1
9040 SOUND 1,N,15
9050 SOUND 2,N-10,15
9060 SOUND 3,N-20,15
9070 PLAY 7,0,0,0
9080 NEXTN
9090 UNTILM=10:PLAY0,0,0,0
9100 FORX=1 TO 50
9200 SOUND 1,X,15
9300 SOUND 2,X+5,15
9400 SOUND 3,X+10,15
9500 PLAY7,1,0,0
9600 NEXT X
9700 PAPER 7
9800 PLAY0,0,0,0:RUN

```

MUSIC TUTOR 5

```

10 REM NOTE READING GAME ' A.M.THOM 1
2/12/83
15 CLS
16 DOKE 630,10000
17 PAPER6:INK0
20 GOSUB 5000:REM INSTRUCTIONS
30 GOSUB 6000:REM DRAW STAVE
35 RESTORE
40 FOR N=1 TO INT(RND(1)*22)+1
60 READ NAME$,CO ,P ,CLEF
61 NEXTN
65 IF CLEF=1 THEN GOSUB 7000ELSE
    GOSUB 8000
70 SOUND 1,CO,10
71 PLAY1,0,0,0
75 X=X+50
80 CURSET X,P,0
90 CIRCLE5,1
121 REPEAT
122 K$=KEY$:T=DEEK(630):RT=(10000-T)/
100:IFRT> 60THEN GOSUB10000
123 CURSET 180,180-(INT(RT)*3) ,1
124 FILL 3,9,129
128 IF K$=""THEN 122
129 IF K$<>NAME$ THEN ZAP:SOUND 1,CO,
10
130 UNTIL K$=NAME$ :SC=SC+1:PING
140 CURSET63,60,1
150 FILL 80,20,64
155 GOTO 30
160 END
5000 PRINT:PRINT CHR$(138)SPC(8)
"NOTE READING"
5010 PRINTCHR$(138)SPC(8)"NOTE READIN
G"
5020 PRINT
5030 PRINT"Here is a short note readi
ng game."

```


MUSIC TUTOR 5

```

5040 PRINT
5050 PRINT"You have 60 seconds to nam
e "
5060 PRINT
5070 PRINT"as many notes as you can"
5080 PRINT:PRINT:PRINT:PRINT
5090 PRINTSPC(3)"Press the <SPACE BAR
> to start"
5095 GET A$:IF ASC(A$)=32 THEN 5100 E
LSE 5095
5100 HIRES:PAPER6:INK0:DOKE630,10000
5999 RETURN
6000 X=65:Y=80 :Z=100
6005 FOR Y=80 TO 120 STEP 10
6010 CURSET X,Y,1
6020 DRAW Z,0,1
6030 NEXT Y
6050 CURSET 170,180,1
6060 NU$=" 12345"
6070 FORA=1 TO LEN(NU$)
6080 CHAR ASC(MID$(NU$,A,1)),0,1
6090 CURMOV0,-30,0
6100 NEXT
6200 RETURN
7000 CURSET X+10,110 ,1
7010 CIRCLE 9,1
7020 CURMOV -10,0,1
7030 DRAW 20,-45,1
7040 DRAW -5,-5,1
7050 DRAW -5,5,1
7060 DRAW 0,65,1
7070 DRAW -4, 4,1
7080 DRAW -4,-4,1
7999 RETURN
8000 CURSET X+10,90 ,1
8010 DRAW -5,5,1
8020 DRAW -5,-5,1
8030 DRAW 7,-7,1
8040 DRAW 5,0,1

8050 DRAW 7,7,1
8060 DRAW-12,30,1
8070 DRAW -3,-2,1
8080 CURSET X+20,85 ,1
8090 CURSET X+20,95 ,1
8999 RETURN
9000 DATA"G",78,75,1
9010 DATA "F",88,80,1
9020 DATA "E",93,85,1
9030 DATA "D",105,90,1
9040 DATA "C",141,95,1
9050 DATA "B",158,100,1
9060 DATA "A",141,105,1
9070 DATA "G",158,110,1
9080 DATA "F",177,115,1
9090 DATA "E",188,120,1
9100 DATA "D",211,125,1
9110 DATA "B",252,75,2
9120 DATA "A",283,80,2
9130 DATA "G",317,85,2
9140 DATA "F",356,90,2
9150 DATA "E",378,95,2
9160 DATA "D",424,100,2
9170 DATA "C",476,105,2
9180 DATA "B",508,110,2
9190 DATA "A",568,115,2
9200 DATA "G",637,120,2
9210 DATA "F",715,125,2
10000 EXPLODE:TEXT:WAIT50 :PLAY0,0,0,
0
10010 PRINT:PRINTSPC(5)"YOU SCORED ";
SC;"POINTS"
10020 PRINT
10030 PRINT" Press the <SPACE BAR> fo
r another go"
10040 GET A$ :IF ASC(A$)=32 THEN 1005
0 ELSE 10040
10050 RUN
10060 RETURN

```

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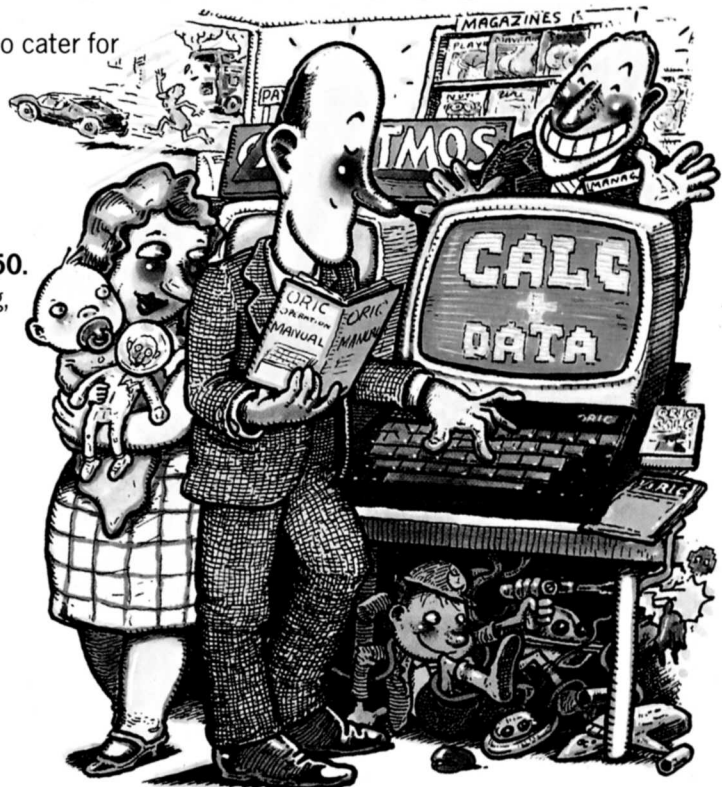
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3
 Volume: 11/11/2011

MICRODRIVE TEST DRIVE

The legendary, long promised Oric Microdisc drives are here and on sale. At £299, they cost a substantial sum, but as the saying goes 'better late than never'.

When Oric Owner talked to Dr Paul Johnson, chief designer of the Oric-1, early last year, he was promising 5¼" discs for the very near future. The brochure mentioned availability 'in the first half of 1983'. Oric must have regretted that early promise many times in the ensuing months.

In those early days, Dr Johnson wasn't even sure what format discs were going to be used. He expected they would use minifloppy 5¼" discs, as they were coming down in price so rapidly. 'We'll go over to microfloppies when and only when, we can see which one is going to be the clear winner,' he stated.

In the end, the microfloppy 3" disc won the day, and it is a 3" disc drive unit that Oric have gone for.

Compared to 5¼" discs, the small 3" discs are much tougher – an important advantage if you aren't used to caring for floppy discs. However, if you have a 5¼" drive, don't despair. It can be connected to a Microdrive and controlled by your Oric.

You are probably wondering what use a £299 disc drive unit could be to you. You've been getting on pretty well with that £30 cassette recorder until now. Of course, there is the problem that some programs take a long time to load (remember the adventure game that only loaded at the slow speed?). Then there is the problem of finding a particular program on a tape loaded with thirty programs, when you can't find the list of titles, or remember the exact title of the program you are searching for.

Then there was that tape that was chewed up in the cassette recorder, and the other game that refused to load, and still doesn't. And there was that long program you'd written that was corrupted somehow and had to be scrapped. Still, that's all part of the joy of computing – isn't it?

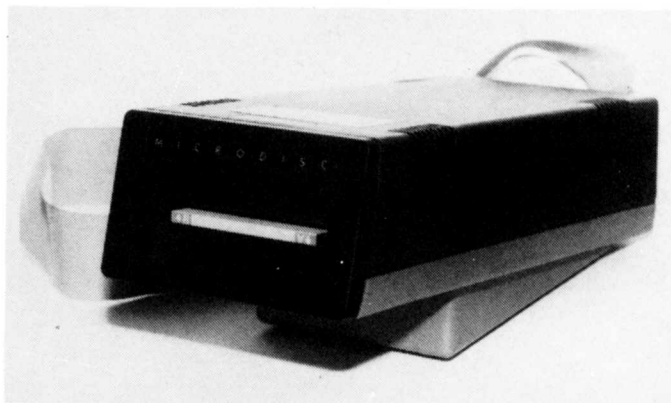
A disc drive unit will solve all these problems – and give you a whole lot more besides. Basically, it is designed to store a huge amount of data, and give almost instant access to any part of that data.

A disc drive contains a head to read the magnetic signals on the disc, and a precisely controlled motor to rotate the disc. There are plans to make a double-headed disc drive – that is for the future. It will cost more but saves you having to turn the disc over by hand, and gives access to double the files.

Visually, the Microdisc unit looks very plain and simple. It is finished in the red and black Atmos colours, with the Oric logo on top. At the front there is a slot for a disc and a disc eject lever. At the back there is a 34 pin port for a slave drive, a red reset button and a multipin power socket. There's a large heatsink too, and a 34 way cable connected. A slave disc drive is being planned by Hitachi, the Microdisc's designers, but is not in production yet. Up to three slave drives may be connected to the Microdisc unit.

The unit comes with a sloping plinth that props up the front end and lets the unit sit snugly behind the Atmos, a built-in 34 way ribbon cable (with another 34 pin socket built-in), one 3" disc and a chunky power unit. There's a 52 page manual to plough through too.

If you're an Oric-1 owner – don't fret. The new accessory is suitable for your computer, even if the colour scheme doesn't match.



Getting going is simple enough. You can discard your Oric's power supply unit. The drive's power unit has cables to power a computer and two disc drives. Plug in to your monitor and connect it to Oric as normal. Plug in the power cables and connect the Microdisc to the Oric with the 34 way cable. It fits the longer expansion port of the Oric. Turn on at the mains and the system comes to life. The Microdrive has no on/off switch.

The message 'insert system disc' will appear on the monitor. Slot in the supplied disc, either side up, and a light will come on at the front of the unit. This means data is being transferred from drive to computer. This up to ten seconds, and then the message ORIC DOS V1.1 appears above the cold start message on the monitor. You are ready to roll.

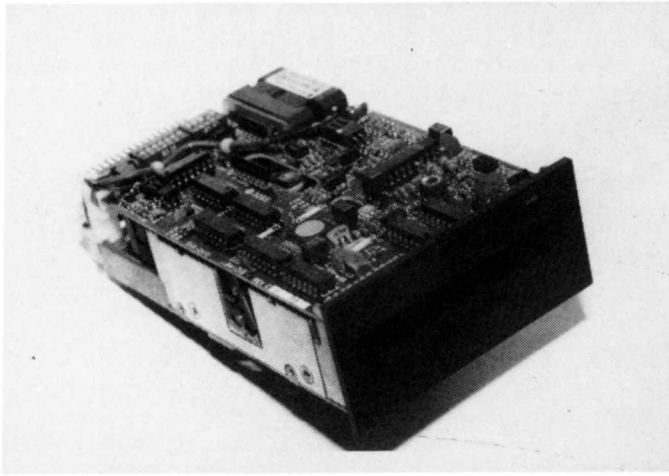
Unless you have another disc, you'll only be able to watch a demonstration program (Microdisc, Atmos and Oric-1 in pretty colours) or find out what the DOS commands do. You'll need another disc or discs to do anything else. Extra discs cost around £5 each. This price may come down as companies like Maxell and 3M get in on the microdisc act.

A microdisc is a disc of plastic coated with a metal oxide that stores magnetic signals. The whole is enclosed in a tough plastic case, except for a hole that gives access to the read/write head. A metal plate covers the hole when the disc is out of the drive. The only risk of damage comes from strong magnetic fields.

The disc can best be thought of as a record. It has a number of tracks – 40 in this case. Hitachi have plans for double density discs, with 80 tracks per side, but these are for the future. They will double the storage of each disc.

The disc is also divided up into 16 sectors. A particular file can thus be identified by specifying the track and sector numbers. There are 640 files available, though two are used for the title of the disc, leaving 638 files on each side of the disc.

Each file consists of 256 bytes, each byte able to hold a character. So, one side of a disc can hold over 160,000 characters – an enormous capacity. When you consider the storage space and the reliability of data transfer, you can see why disc drives are so popular with the serious computer user. It is not only the storage that is appealing. So is the speed of data transfer. With a cassette tape, the whole tape has to be played past the head, until the relevant program is found. That could take many minutes. With a disc drive, you specify the track and sector numbers. The read head goes straight to that file and transfers data almost instantaneously. The data transfer rate is 250,000 bits per second. The transfer rate from cassette is a mere 2,400 bits per second.



Inside the Microdrive – it is a complicated machine

That's the theory. What does it mean in practice? We loaded the first six listings in this issue on one disc. They occupied a total of 203 sectors, leaving 435 free, plus another side. We then compared the loading time for the Puss in Boots adventure. It took minutes from cassette. From disc, it took five seconds! Fast is an understatement.

The first thing to do is to make a backup copy of the Disc Operating System (DOS) on the supplied disc. If it should be damaged in any way, you are stuck.

Before any disc can be used, it must be formatted. This gives it a name and divides it up into sectors. Insert a fresh disc and type in `!FORMAT 0`. The `0` identifies the drive; you'd use other numbers if you wanted to format on a slave drive. You'll then be prompted for the name of the disc, and formatting will take place.

Now, to the backup. Insert the original disc and enter `!BACKUP 0 to 0`.

On RETURN, the data loading light will appear and a chunk of data will be transferred to a buffer in your Oric. When that is full, you will be prompted to remove the original disc, insert the back up disc and press RETURN. Data will then be transferred to the backup disc, with the light indicating that data is being saved. Go back to the master disc and repeat this process until the backup is complete. If you had two drives, data would be transferred directly from one to the other.

The next thing you are likely to do is to transfer BASIC programs from cassette to disc. That is simple too. The PROGRAM must be loaded with CLOAD and then saved to the disc with `!SAVE 'filename'`. There is only one annoying feature. Data cannot be CLOADed unless the Microdrive is disconnected from the computer. You have to pull out the ribbon cable each time you load a new program, and plug it in again to transfer data to disc. It is an annoying trait that we would have expected the designers to have overcome.

Files must be named. The name can only be six characters long at most, though it can have a three letter extension.

To see what files are on a disc, enter `!DIR`. The files and how many sectors they occupy will be displayed. That is a very handy command. If you aren't too sure of filenames, you can use 'wildcards' to indicate a group of files. `M*` will act on any file starting with M. `M?X` will act on any file with a three letter name starting with M, ending with X.

`!LOAD 'filename'` loads a file from disc. You will be told if such a file doesn't exist.

`!DELETE` has the obvious function of deleting a named file. To prevent this, files can be protected with the

command `!PROT`. A file can be stripped of protection too or made invisible so it won't be listed. There is a slot in the disc sleeve that prevents a file being written to when covered. It is a bit like the record preventing tabs on the back of cassette tapes.

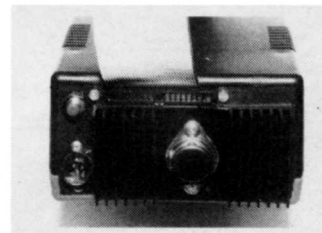
`!COPY` is a powerful command. It allows a file to be copied from one location to another, with a change of name if necessary. It also lets you merge two or more files into one file. `!RENAME` simply renames an existing file.

If, at any stage, you get confused by the commands, `!HELP` is a file that gives a guide to what the various commands do and their correct syntax. There are also numerous warning errors, though these can be suppressed if you want. If the worst happens and the system crashes, remove the disc, press the reset button on the back of the Microdrive, and reload the DOS.

There are two commands that enable BASIC arrays to be saved or loaded. They are `!STORE` and `!RECALL`. You can load an array of any size with any number of dimensions.

The other usable commands relate to file handling. They are `!OPEN`, `!CLOSE`, `!PUT` and `!GET`. By using these commands, you can open two files simultaneously, one to read from, one to write too. You can get data from one, manipulate it or transfer it to another file.

This is like using READ and DATA statements in a BASIC program. Use `!PUT` to fill a file with new data and `!GET` to retrieve the data. While the Oric's system is not as sophisticated as some, it is quite sound. Better systems allow more than one file to be opened, and data from any part of that file to be accessed immediately.



A 3" microdisc costs around £5.



Microdrive rear

At the moment, little software is available on disc. Tansoft are transferring programs like Author and Oric Base to disc, demonstrating the type of programs a disc drive is most suitable for.

The only restrictions on programs is that if they use memory above #400, and call the DOS when running, the program will crash.

The Microdrive unit is a vital part of the Oric system. It is obviously not aimed at the beginner – the price sees to that. However, the Oric owner who uses his or her Oric for word processing, as a data base or for application where there is either a large quantity of data to be stored, or rapid access is required, will find the new Microdrive a blessing.

There are few other 3" disc drives to compare it with. Compared to existing 5¼" units, it is cheaper than most, smaller than most and has a tougher storage medium. The costlier minidisc drives manage to get more data on a disc though. Double density 3" discs will even that score.

What Oric have done is to release a product that is as bang up to date as possible. The advantages are fairly evident, the potential for further developments is there and the price is not unreasonable for the facilities. It won't be an item that sells in high numbers, but those who buy it won't be disappointed.

WIN AN ATMOS UPGRADE

If you are an Oric-1 owner wishing your computer was the new Oric Atmos, here's your chance. We have three complete upgrades to give away to the winners of this competition. All you have to do is answer five multiple choice questions correctly and use your imagination to come up with a name for another Oric computer.

The upgrade normally costs £60. For that your trusty 48K Oric-1 will receive the new VLI ROM, a brand new, full movement keyboard, a new black and red casing plus an Atmos manual and a full twelve months' guarantee. In short, your old computer will become a classy new Atmos.

That will give you many new facilities you don't at present have, and clear out all those annoying bugs. Most existing software will run too.

The new commands relate mainly to file handling and cassette routines. There is a verify routine so that you can be sure a program has been CSAVED correctly. There is a join facility so that two programs can be merged. You can also STORE and



RECALL arrays.

The questions are designed to test your knowledge of the Oric-1. You'll find some of the answers in this issue of Oric Owner, others by trying them out on your computer, and others by – well, that would be telling!

As a tiebreaker, we are also asking you to come up with a name for a new Oric. We've had the Oric-1 and the Atmos. What might Oric call a third computer? Use your imagination to think up a name that would appeal to the public and perhaps relate to

the sort of image you see Oric trying to convey.

All entries should be on the back of a postcard, with your name and address of course. Send entries to:

Upgrade Competition,
Oric Owner,
Unit 1,
Techno Park,
Newmarket Road,
Cambridge, CB5 8PB

They should reach us by last post, 30th June, 1984. Winners will be notified and the results published in a future issue of Oric Owner.

Where does the name ORIC come from?

- a) the word 'oracle'
- b) rearranged letters from the word 'micro'
- c) the name of the computer in Blake's Seven, AURAC

What central processing Unit does the Oric use?

- a) 6502A
- b) Z80
- c) 6809

What is the total (RAM and ROM) memory of the Oric-1?

- a) 37631 bytes
- b) 47870 bytes
- c) 65538 bytes

Which of these commands is not in the VLI ROM?

- a) EDIT
- b) POS (0)
- c) STORE A, " "

How would the command PLOT 3,5,"a" for the VLI ROM need to be written to have the same result on the VLI RAM?

- a) PLOT 2,5,"a"
- b) PLOT 4,5,"a"
- c) PLOT 3,6,"a"

WINNERS

Congratulations to Mr S. Jackson of Beeston, Nottingham. He was the winner in our December/January crossword competition. His prize was a brand new Oric MCP40 printer.

Besides getting the crossword out correctly, Mr Jackson also had a good slogan. He finished the sentence 'I like Oric Owner because . . .' with the words 'with news and reviews and programs galore, it chases the blues, it's never a bore.'

There were ten runners up too. They each won copies of Defence Force and Ultima Zone – two top selling arcade games. The runners up were: S. Belcher, Bracknell; P. T. F. Church, Waltham Abbey; J. Flute, Sudbury; T. Fisher, Watford; A. Gibbons, Rochester; D. Hoults, Coventry; P. Miller, Romford; B. Leake, Camberley; T. R. Perkins, Corby; P. Swan, Bristol.

Congratulations to all these entrants, and the rest of you – have a go at this issue's competition.



SOUND ADVICE

The sound commands of the Oric aren't as clear as they might be. Kester Cranswick explains how they work.

All the critics agree that the sound facilities of the Oric are superb. The only problem is that their versatility makes learning to use the sound commands a daunting business.

The Oric has three types of sound – operational, pre-defined and user controlled. All sound are output through a small loudspeaker in the base of the computer. A five pin DIN socket on the back of the computer will feed sound to an amplifier, giving HiFi sound quality that is quite breathtaking. Unfortunately there is no way to silence the on-board speaker, bar cutting the wires.

There are three operational sounds. Pressing any input key gives a click, a useful check that a key has been pressed correctly. A different click is given when cursor control, RETURN or ESC keys are pressed. Finally, should you attempt to enter too long a line in BASIC, a warning bell will sound for the 76th, 77th, 78th and 79th characters. Any more inputs will result in a cancelled line.

The key clicks can be turned off by pressing CTRL and F together. This has a toggle action, so a further simultaneous CTRL and F switches the clicks back on again. In a program, PRINT CHR\$(6) has the same toggle effect. You can also POKE the key click toggle register. POKE#26A,11 ensures the key click is off, POKE#26A,3 ensures the key click is on. POKE 618,11 or 3 has the same effect. The long line warning bell can't be turned off.

There are four pre-defined sounds – PING, ZAP, SHOOT and EXPLODE. Type in those commands either directly or as part of a BASIC program and you'll get the appropriate sound. PING can also be produced by pressing CTRL G, or using PRINT CHR\$(7). To produce a sequence of these sounds, use a FOR ... NEXT loop.

A FOR ... ZAP ... NEXT loop will work without embellishment. The other sound commands will need a WAIT statement. Without this, the sequence of sounds will overlap and only one sound will be discerned. By varying the WAIT time, you can alter the effect. Minimum values to try are WAIT 15 for SHOOT, WAIT 20 for PING and WAIT 75 for EXPLODE. Experiment with WAIT values to see their effect.

Pre-defined sounds are certainly easy to use. However they can't be varied in volume or pitch, and the repertoire is limited. By using SOUND, MUSIC, PLAY and WAIT commands, the full potential of your Oric can be exploited.

Oric's sound is produced by an 8912 chip. It can produce sound to three 'channels', and there are four possible sound sources. Three of these produce pure tones that we would recognize as musical notes of some kind or another. The fourth produces white noise – buzzing electronic noise that usually sounds unmusical. By controlling each of these sounds and blending them together, a vast range of synthesised sounds can be produced.

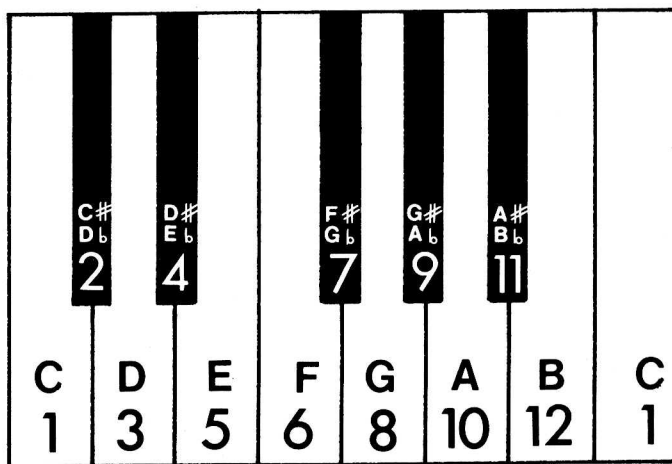
MUSIC is the easiest command to get to grips with. If you have any knowledge of music theory, you'll have no problems using it.

A MUSIC command takes the form MUSIC C,O,N,V where C,O,N and V are integers. Let's look at each in turn.

The first number, C, indicates which channel the music is to come from. It can be either 1, 2 or 3 – at this stage, it makes no difference which channel is chosen. Set any number other than 1, 2 or 3 and you'll get an ?ILLEGAL QUANTITY ERROR message.

The second number, O, selects the octave the music will be played in. The Western musical scale consists of twelve notes, and a set of twelve notes is an octave. The Oric gives a choice of eight octaves, numbered zero to seven. Zero is the lowest, seven the highest.

The third number, N, determines the note that will be played in the octave. The range is from 1 to 12, with each number corresponding to a note on the musical scale. The keyboard diagram shows the relationship between note and number.



The last number, V, gives the volume at which the music is to be heard. 1 is the softest volume, 15 is loud enough to really annoy the neighbours. You can set 0 too, but that hands volume control over to part of the PLAY command, of which more later.

MUSIC then gives you a choice of 96 notes at 15 volume settings and in any of three channels. To hear the range of notes, try this short program.

```
5 REM *** MUSIC DEMO ***
10 FOR O = 0 TO 7
20 FOR N = 1 TO 12
30 MUSIC 1,O,N,7
40 WAIT 20
50 NEXT N
60 NEXT O
```

To stop a note, make sure the key click is on and press any key. The WAIT command is needed to separate the notes into separately discernible tones. Omit line 40 to see the difference it makes.

If you change to another channel, you won't get any noise at all. To 'enable' a channel other than, or in addition to channel one, you'll have to use the PLAY command.

Still, with the MUSIC command it is relatively simple to play simple melodies. If you have some sheet music, you should be able to convert the printed notes to octave and note values. The length of the note is determined by the WAIT value, so settle on one value for a full beat and

halve, double or whatever that WAIT value to get the right note length. Each note will thus have an octave, note and wait value. Put these three values in DATA statements, READ them into octave, note and wait variables, set a volume and RUN.

You might also set up the keyboard to act as a musical keyboard. Give each key an octave and note value, scan the keyboard for key presses and use the input to achieve a MUSIC output.

SOUND is a more versatile command, though not as structured as MUSIC. A SOUND command takes the form of sound C,P,V, where C, P and V are again integer values.

C, as before, stands for Channel. However, the range of values has doubled. Numbers from one to six will be accepted.

Numbers 1, 2 and 3 enable those channels to generate a sound signal, as with the MUSIC command. Again, without a PLAY command, only channel one will give a sound.

The sound emitted is determined by the next figure, P, standing for Period. This can have a value of from 0 to 4095. The manual gives the range as up to 65535, but as the Period store is a twelve bit store, numbers above 4095 simply repeat the period sequence.

The higher the period number, the lower the tone of the sound. This short program shows the possible range.

```
10 REM *** PERIOD RANGE DEMO ***
20 FOR P = 0 TO 4095 STEP 50
30 SOUND 1,P,7
40 WAIT 20
50 NEXT
```

As with MUSIC, a WAIT is needed to give distinct sounds, and the final tone is stopped by pressing a key with the key click on.

The final number in SOUND command is V, and that controls volume in the same way as it did with a MUSIC command.

So far, SOUND is simply a less exact form of MUSIC. It has 4096 tones to choose from, compared to 96, but getting the right sound may be harder.

What the very small difference between tones does mean is that you can create sounds that rise and fall in pitch very smoothly. Use FOR...NEXT loops to do this. Here's a simple example.

```
10 FOR P = 1000 TO 300 STEP-2
20 SOUND 1,P,INT(P/100)+3
30 NEXT P
40 EXPLODE
```

The extremes of P determine the start and end pitches, the step value how rapidly the sound is zoomed. By relating the volume, V, to the P value, we get a changing volume too. It is a simple technique that's worth experimenting with.

If you set C, Channel, to 4, 5 or 6, something different happens. These numbers activate the noise channel, mixing it with channels 1, 2 or 3 respectively. The functioning of the variable P is affected too. It now has a pitch range of 0 to 31 – higher numbers simply repeat this range. V works in the same manner, as usual.

Changing the C value in line 30 of the pitch demonstration to 4 (giving noise on channel one) still gives a tone, not noise, when the program is RUN. That's because the noise channel hasn't been enabled, with a PLAY command. Add

```
5 PLAY 0,1,0,0
```

to the program and you will hear the effect of different pitch values.

SOUND, therefore, gives a choice of 4096 tones, or 32 pitches of noise. To put all these things together, the PLAY command is needed.

A PLAY command is followed by four variables, T, N, E and P. T stands for Tone enable, N for Noise enable, and these commands work in a very similar manner.

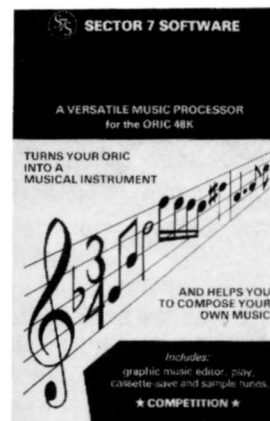
Tone enable can have an integer value from 0 to 7. Different values enable different channels, or channel combinations, as shown in the chart, 0 disables all channels, 1, 2 and 4 enable just one channel, 3, 5 and 6 enable two channels and 7 enables all three channels. In practice, you'll usually only need the numbers 0, 1, 3 and 7 for none, one, two and three channels of sound respectively. For NOISE enable, N values of 1, 2 and 4 feed the noise through channels 1, 2 or 3. In practice, just use 0 or 1 to turn noise off or on.

SOUND - Channel enables				
1	Channel 1 on			
2	Channel 2 on			
3	Channel 3 on			
4	Noise + Channel 1			
5	Noise + Channel 2			
6	Noise + Channel 3			

PLAY - Tone enables			
Tone Value	1	2	3
0	—	—	—
1	•	—	—
2	—	•	—
3	•	—	•
4	•	—	•
5	•	•	—
6	•	•	•
7	•	•	•

PLAY - Noise enables			
Noise Value	1	2	3
0	—	—	—
1	•	—	—
2	—	•	—
4	—	—	•

Musical aid program from Sector 7



Enabling a channel allows music, sound or noise to be played through it. Remember that you can have three music or sound tones playing, one through each channel, and a noise mixed up with one of the three channels.

The simplest way to use PLAY is to set up each channel to play a harmonising piece of MUSIC, then enable all three tone channels (T = 7) and RUN the program. You will have a basic three part harmony PLAYing. So, for a C Major chord, enter these lines and RUN.

```
10 MUSIC 1,3,1,7
20 MUSIC 2,3,3,7
30 MUSIC 3,3,5,7
40 PLAY 7,0,0,0
```

To add some noise, enter 35 SOUND 4,15,10 and 40 PLAY 7,1,0,0. When RUN, channel one will emit both music and noise.

A note will sound until another note is commanded or the program stopped. By the use of WAIT statements, it isn't hard to program your Oric to play quite sophisticated music.

You can use SOUND in any or all of the channels in place of MUSIC, with PLAY enabling the appropriate channels. By adding noise as well, you can generate a wide range of sound effects for games or utilities. Unfortunately there is no shortcut to getting the exact sound you want. Use loop structures to give different sounds and print out variable values at the same time. An additional aid might be to record the sounds you produce, along with their relevant variables, and build up a sound library.

Now, back to PLAYing. We've only dealt with the two first variables so far. We have assumed that all MUSIC and SOUND statements have had a volume variable, V, of from 1 to 15. However, you can also set the volume to

0, and that hands over control of the volume to the PLAY command.

With a non-zero volume, the sound emitted is a steady tone or noise, with no rise or fall in volume. With the volume at 0, you can choose the 'shape' of the sound.

The Oric allows seven sound 'shapes', or envelopes. They are illustrated here, and are numbered one to seven. To use a particular envelope, set the variable E to the appropriate number. Set V to 0 and the envelope mode will be 1. The envelope will affect any sound, noise or music tones it is controlling.

This short program demonstrates what each envelope sounds like when applied to a single note.

```
10 FOR E = 1 TO 7
20 MUSIC 1,3,1,0
30 PLAY 1,0,E,200
40 WAIT 100
50 PLAY 0,0,0,0
60 WAIT 100
70 NEXT
```

Line 50 is to stop the sound of each note before the next one. Delete line 50 and the sounds will run into each other. Line 60 gives a short break between the sounds.

If you compare the sounds you hear with the envelope diagrams, they should be quite clear. Envelopes one and two give a single note, envelope one falling away (decaying) slowly, envelope two rising in volume gradually (a slow attack) and falling away suddenly.

Envelope three gives a rapid sequence of the first envelope pattern, while envelope four gives a sequence of rising and falling notes. Envelope six repeats envelope two in rapid sequence, while envelopes five and seven attach an envelope one or two to a steady tone. The envelopes thus combine three basic patterns in a variety of ways, controlling volume from minimum to maximum.

There is one more variable in the PLAY command - P, for the Period. It can take any integral value from 0 to 65535, and it dictates the length of the envelope. Each 1000 gives about one second's sound, for each 'wave' in the envelope pattern. Note that each 100 of a WAIT command gives a one second pause. A WAIT controls the length of time a note is allowed to sound before the next starts.

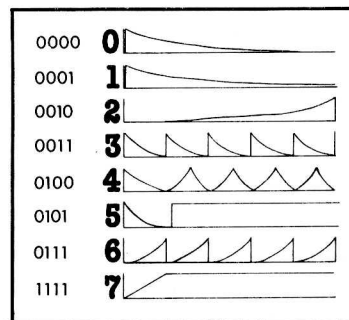
By combining different period and WAIT times, a particular effect can be achieved. For the non-repeating envelopes (1 and 2), the period needs to be some 20 times longer than the WAIT. This gives time for the single note to develop and only a short interval between notes.

The repeating patterns (3, 4 and 6) need comparatively shorter times, to allow a number of repeats of the note before the next PLAY command. With envelope 4, remember to allow for the fact that attack and delay times are equal, so a halving of the period in comparison to envelopes 3 and 5 is needed to get the same number of repeats in a given time.

Treat envelopes 5 and 7 as you would 1 and 2 - a longish period to give a discernible attack or decay, with the length of the steady tone controlled by the WAIT command.

When you have finished PLAYing, make sure you have PLAY 0,0,0,0 in the program to stop any sounds. It is also advisable to turn off the keyboard clicks, as pressing a key may affect the Oric's sound.

By combining the envelope patterns with various sound and noise tones, you get a greater variety of sounds than you might with the fixed volume settings. Using envelopes to control MUSIC allows the Oric to imitate different musical instruments. In short, the Oric has a full synthesiser on board, if you take the trouble to get to know it.



Sound can be used in a number of ways. For games and utilities, relatively simple sounds could be called from various sub-routines, assuming the pre-defined sounds are unsuitable.

Using the Oric to play back music that has been programmed in is another possibility. Set up each channel with the right envelope or volume, enter the octave, note and WAIT data in DATA statements, enable channels with a PLAY command and away you go. At first it may seem laborious, but get a simple routine established and it is then only a matter of translating from paper to DATA statements.

Finally, you could turn the Oric into a full synthesiser. You'll have to allocate keys to different notes of MUSIC, or different SOUNDS, and may wish to set up a number of different types of sound that can be switched in at the press of a key. You might also use the noise feature to generate a rhythm, and could probably build in a means of storing a sequence of inputs before playing them back. Output all this to an amplifier and you'll have a super musical instrument.

If you don't want to go to the trouble of writing such a program yourself, there are a number of sound aid programs available. Composer is by Sector 7 and costs £6.50, and Tomorrow's World do a Synthesiser for £7.95.

That takes care of the BASIC sound commands. Using this knowledge, spending time at the keyboard and adopting a systematic approach to programming, you can unlock the enormous sound potential of your Oric.

Of course it is possible to access the 8912 sound chip directly, with Machine Code. This chip has 14 registers, and the data fed to them determines the sound output. BASIC sound commands are one means of altering the data. Each of the pre-defined sounds also feeds a certain set of data, as do each of the operational sounds. Enter CALL#FAC7 and see what sound you get. CALL#FB0B gives a key click. Atmos owners should CALL#FAE1 and #FB14.

The ROM is stuffed full of pre-set data, and so by feeding data from different addresses in the ROM, you can access a huge variety of repeatable sounds. Here's a short Machine Code routine to do that.

BASIC SOUND COMMANDS

MUSIC C,O,N,V

C - Channel 1,2 or 3
O - Octave 0 (low) to 7 (high)
N - Note 1 (C) to 12 (B), standard scale
V - Volume 1 (soft) to 15 (loud), 0 for envelope control
Total of 96 notes at 15 volumes, or envelope controlled in any or all of three sound channels

SOUND C,P,V

C - Channel 1, 2 or 3 for tones
4, 5 or 6 for noise in channels 1, 2 or 3
P - Period 0 (high) to 4095 (low) - tones
Pitch 0 (high) to 31 (low) - noise
V - Volume 1 (soft) to 15 (loud), 0 for envelope control
Total of 4096 tones at 15 volumes or envelope controlled in any or all of three channels
Total of 32 electronic noises at 15 volumes or envelope controlled in any of three channels

PLAY T,N,E,P

T - Tone enable 0 (no channels) - 7 (all channels)
N - Noise enable 0 (no channels), 1, 2, 4 for channels 1, 2 or 3
E - Envelope pattern 1 to 7
P - Envelope Period 0 to 65535; 1000 is approx 1 sec
Enables any combination of three channels for SOUND or MUSIC, plus one channel for noise. Gives envelope control of volume.

WAIT X

X - duration, 0 to 65535; 100 is approx 1 sec

```

#400 #A2 LDX
#401 #XX Lo. addresss byte
#402 #A0 LDY
#403 #YY Hi. address byte
#404 #20 JSR
#405 #86 (Atmos)
#405 #6C (Oric-1)
#406 #FA Calls#FA6C/86
#407 #60 RTS

```

To use this routine, enter the following line
POKE#401,XX: POKE#403,YY: CALL#400

XX and YY are the low and high order bytes of any memory location you want to access. #FA6C is the routine used by SHOOT, PING and EXPLODE commands to feed data to the sound chip in the Oric-1. #FA86 is the equivalent Atmos routine.

If you have the time, this short program will run through all available addresses, feeding the start contents of and next thirteen addressses to the sound chip. Enter the MC routine first, with a BASIC loader.

```

10 FOR Y = #00 TO #FF
20 FOR X = #00 TO #FF
30 PRINT "#Y,X
40 POKE #401,X: POKE #403,Y: CALL #400
50 WAIT 100
60 PLAY 0,0,0
70 WAIT 100
80 NEXT X
90 NEXT Y

```

If you hear a sound you feel would be useful, note the hex address and, with the Machine Code routine, POKE and CALL the sound when necessary.

An alternative to this is to load the sound chip directly with your own data. Each of the fourteen registers has a certain function, and can be accessed directly. You'll need the same Machine Code routine as used for the last program.

What you have to do is to pick an address in RAM, POKE it and the next thirteen addresses with the hex data for the sound you are trying to produce and then use the previous routine -

```
POKE#401,XX: POKE#403,YY: CALL#400
```

You could then define the ! key to call that routine and thus add a new sound to your programs.

Look at the diagram of the sound registers to see what they are and what values they will take.

Registers 0 to 5 control the pitch of each of the three tone channels, two registers to each channel. Registers 1, 3 and 5 give a 'rough' pitch value, registers 0, 2 and 4 'fine tune' it. The coarse tune register takes values from #00 to #0F - sixteen values in all. The fine tune registers take values from #00 to #FF - 256 values in all. Now 256×16 gives 4096 - exactly the number of period values available for each channel.

Similarly, the noise pitch register, 6, has five bits, so can take a range of values from #00 to #1F, or 0 to 32 in decimal.

Register 7 is the tone and noise enable register. It has eight bits, though the two most significant bits are for two in/out ports, and of no concern here.

The remaining registers relate to noise and tone in the three channels respectively. A bit set to one (on) enables noise or tone in that particular channel. So, to enable all three tone channels, the register should look this - 0000 0111 i.e. have a value of #07. Poking hex values from #00 to #83 enables the relevant channels.

Registers 8, 9 and 10 control the amplitude of the signal from each channel. They are five bit registers, so take hex values from #00 to #1F - 32 settings in all. This doesn't seem to relate directly to the BASIC sound commands, but different values affect the volume and length of the tone. You'll have to experiment here.

Registers 11 and 12 are both eight bit registers and control the envelope period. Each takes settings from #00 to #FF, the first register being a fine tune register, the second coarse tune. That is how envelope periods from 0 to 65535 are accommodated.

The last register controls the envelope period. It has four bits, so takes values from 0 to 15 - more than double the number of envelope shapes available.

Reg	Function	Max value	b7	b6	b5	b4	b3	b2	b1	b0
0	Tone Period - 1, fine	#FF								
1	Tone Period - 1, coarse	#0F								
2	Tone Period - 2, fine	#FF								
3	Tone Period - 2, coarse	#0F								
4	Tone Period - 3, fine	#FF								
5	Tone Period - 3, coarse	#0F								
6	Noise Period	#1F								
7	Channel Enable - 1 = On	#4F	NA	NA	N2	N2	N1	T3	T2	T1
8	Amplitude - 1	#1F								
9	Amplitude - 2	#1F								
A	Amplitude - 3	#1F								
B	Envelope Period - fine	#FF								
C	Envelope Period-coarse	#FF								
D	Envelope Pattern	#0F								

Each bit has a different function. Bit four gives a repeating envelope when set on 1. The third bit gives an initial attack (rise in tone) when on, an initial delay (fall in tone) when off. Bits one and two are only operative when bit four is on. When bit two is on, the repeating sound falls and rises alternatively. When bit two is off, the sound falls, rises immediately to a peak, falls again, and so on.

Bit one gives a tone that is held when switched on, and cuts off at its peak when off. By picking the right combinations of sound, you can therefore shape you own envelopes. We reckon that envelopes 1 to 7 correspond to register 13 settings of 0, 4, 8, 6, 9, 12 and 13.

To set up a sound, use a FOR...NEXT loop. Increment the counter from 0 to 13, and POKE the base address plus the counter value with the hex value for each register. Obviously this process involves a degree of hit and miss, and you'll need to be careful not to input values too large for the registers, but if you like to experiment, you may well produce some interesting sound effects.

Here's a short program that loads the #400 routine, and lets you input new register value. XX and YY and low and high order bytes of the memory address called from.

```

10 FOR AD=#400 TO #407 55 DATA A2, CC, A0, YY,
20 READ H$              20, 86, FA, 60 (Atmos)
30 H=VAL(H$ + "#")      60 FOR R = 0 to 13
40 POKE#AD,H            70 INPUT " REGISTER VAL
50 NEXT                 UE (#)"; P
55 DATA A2, XX, A0, YY, 80 POKE#YYXX+R, P
    20, 6C, FA, 60 (Oric-1) 90 NEXT R
                                100 CALL#400

```

This routine is not mug trapped and could easily be improved. If you really want to explore the sound facilities of the Oric, then Machine Code is your finest tool. But, even if you stick to BASIC, you'll surely find the Oric has more than enough versatility to keep any electronic composer happy for year:

MORSE CODE

Learning Morse code is not that easy, and transmitting it rapidly is even less so. Here's a short program from Jorge Saiz of Barcelona that lets the Oric translate your messages into Morse code and broadcasts the code from its speaker.

At the start, you are asked for the duration of the point and line signals. In theory, the line should be three times as long as the point, and you can vary the duration to give very fast or quite slow signals. If you were trying to learn Morse, you'd be able to speed up the signal as you got better.

You are also prompted for the volume of the signal, up to a maximum of 15. RUN the program and any letter you type into the keyboard will be output as an audible Morse signal. The program isn't able to keep up with very fast entries, as you must give time for each letter to be translated before the next is attempted. Still, you can get some very rapid transmissions, and probably pick up some of the potentially useful code in the process.

The program will run on all Oric and Atmos computers. It is in simple BASIC, with the Morse code in the DATA statements at the end. The rest is simply correlating the input to the code and outputting it through the sound system.

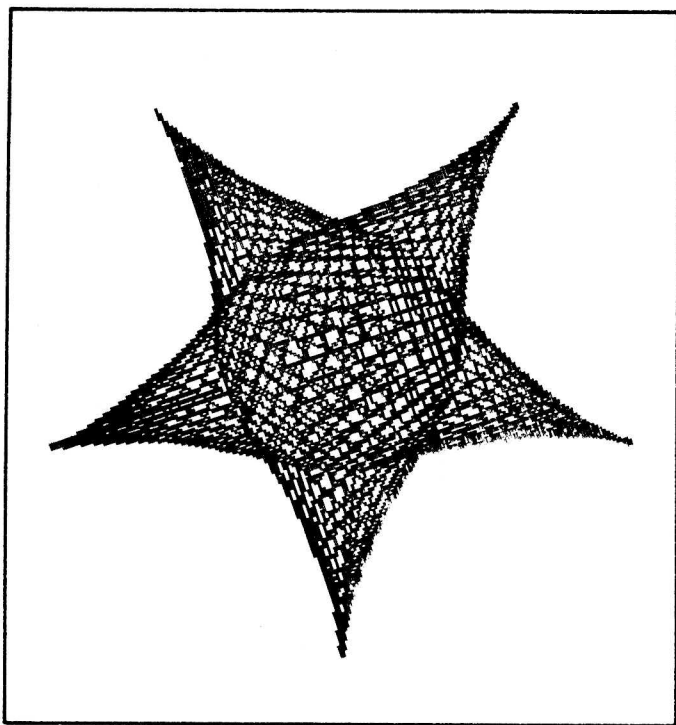
MANHATTAN

HIRES display and random filling with colour attributes generates a display of blocks of vivid colour, overlapping in a unique pattern every time the program is run. Lars Hansen of Norway thinks that the final pattern looks like a Manhattan skyline. Whatever it looks like, it is a very good demonstration of the colour attributes of your Oric-1 or Atmos.

```
5 REM *** MANHATTAN ***
10 HIRES
20 A=RND(1)*230
30 B=RND(1)*190
40 C=RND(1)*6+16
50 CURSETA,B,0
60 L=RND(1)*190
65 IFL<1THEN60
70 IFB+L>190THEN60
80 FILL L,1,C
90 GOTO20
```

```
1 REM *** MORSE ***
4 POKE48000,0
5 CLS:DIMA(43)
10 POKE618,138
12 PING
14 INPUT"DURATION OF POINT (3 - 10)";
F
16 INPUT"DURATION OD LINE (9 - 30)";
W
17 INPUT"VOLUME (1 - 15)";
Y.
18 CLS
19 W$="TO STOP THE PROGRAM PUSH ' / ' "
20 FORX=0TO27:POKE48000+X,ASC(MID$(W$,
X+1,1)):NEXTX
30 FORI=1TO43:READA(I):NEXTI
70 GETC$:IFC$="/"THENPOKE40000,0:STOP
75 PRINTC$;
80 IFC$=""THENSTOP
90 J=1
100 A$=MID$(C$,J,1)
110 IFA$=""THENGOTO70
120 IFA$=" "THEN280
130 A=ASC(A$)
140 A=A-47
150 A=A(A)
160 A$=STR$(A)
170 B$=LEFT$(A$,2)
180 FORJ=1TOLEN(A$)
190 B$=MID$(A$,J,1)
200 IFB$="2"THENSOUND1,75,Y:PLAY1,0,0
,0:WAITF:PLAY0,0,0,0
210 IFB$="1"THENSOUND1,75,Y:PLAY1,0,0
,0:WAITW:PLAY0,0,0,0
220 IFB$=""THEN250
240 NEXTJ
260 J=J+1
270 GOTO100
280 WAIT(3*W)
290 GOTO260
300 DATA 11111,21111,22111,22211,222
1,22222,12222,11222,11122,11112,12122
310 DATA 2,2,2,2,221122,2,21,1222,121
2,122,2,2212,112,2222,22,2111
315 DATA 121,2122,11,12
320 DATA 111,2112,1121,212,222,1,221,
2221,211,1221,1211,1122
```

SPIROGRAPH



This graphics demonstration program lets you experiment with settings of your own, after you have watched the four demonstration drawings. It works along the lines of an old type of pattern generator, the Spirograph. With the Spirograph, you put a pen in a hole in a toothed wheel and moved this wheel around another toothed wheel. The pen generated a geometrical pattern that could be very, very beautiful indeed.

This program does the same, though the screen is the paper and the Oric is the pen. You have to input your own values, and we can guarantee it will be ages before you exhaust the possibilities available.

To start, you are offered the choice of four demonstration patterns, to show the sort of effects that can be produced. Then it is over to you.

You are asked to input four values. The first is the radius of the fixed circle. The next is the radius of the moving circle. The two radii won't be accepted if they would involve the cursor moving off screen.

The next input is the step – the distance between each successive rotation of the moving circle. The final input is for the total number of rotations you want. The four inputs are displayed at the base of the screen of the HIRES screen display.

The radius of the moving circle can be negative if you wish – opening up a whole new type of pattern. Once you get the hang of the sort of variable values that produce the best effects, you'll have plenty of fun with this program.

```
5 REM ***KIRKHAM***
10 PAPER0:INK3:HIRES
20 PRINT"DO YOU WISH TO CONTINUE?"
30 PRINT"[Y]ES, [N]O, [D]EMONSTRATION
";
40 GETA$:IFA$="N"THENTEXT:END
50 IFA$="D"THEN200
60 IFA$="Y"THEN40
99 CLS
100 INPUT"RADIUS OF FIXED CIRCLE (RF)
";RF
101 INPUT"RADIUS OF TRACING CIRCLE (R
T)";RT
110 IF(RF+2*RT)>100THENZAP:PRINT"RF+2
*RT MUST NOT EXCEED 100. REDO":GOTO100
120 INPUT"STEP";ST
121 INPUT"REVOLUTIONS";RV:RV=2*RV:CLS
:GOSUB300
130 GOTO20
200 FORA=1TO4
210 READRF,RT,ST,RV
220 RV=2*RV
230 GOSUB300
235 IFA=4THEN240
237 PRINT:PRINT"PRESS ANY KEY TO CONT
INUE":GETA$
240 NEXTA
250 RESTORE
260 GOTO20
270 DATA 100,-60,0.1,3,10,45,0.1,9,80
,-30,0.1,3,30,35,0.05,7
300 HIRES:INK3
310 PRINT:PRINT"RF=";RF,"RT=";RT,"STE
P=";ST,"REVS=";RV/2
320 FORQ=0TOPI*RVSTEPST
330 X=(RF+RT)*SIN(Q):Y=-(RF+RT)*COS(Q
)
340 CURSET120+X,100+Y,3
350 Z=PI/2-Q*(1+(RF/RT))
360 X1=-RT*COS(Z):Y1=RT*SIN(Z)
370 DRAWX1,Y1,1
380 NEXTQ
390 PING:RETURN
```

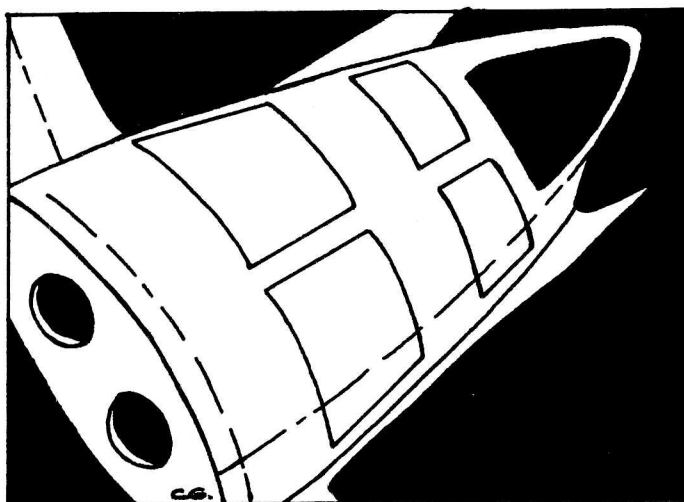

TRAVEL

While the best arcade games have very complex programs, they are based on simple principles. This Quickie from Alan Grosvenor of Glossop, Derbyshire, is a simple space shootout.

Against a starry background, alien intruders move across the screen. You have to align your ship with them using the A and Z keys to control up and down movement. Pressing the space bar fires a shot that may destroy the alien.

There are 38 aliens to destroy. At the end of the game, you are given a score and a repeat option. It is a simple game, but quick to enter and shows how easy it is to construct a passable game.

Atmos owners will have to add one to PLOT X co-ordinates for this program to run successfully on their machines. It will run on both 16K and 48K Oric-1s.



```

5 REM *** TRAVEL ***
10 POKE46416,18
20 POKE46417,12
30 POKE46418,30
40 POKE46419,45
32 POKE46420,45
60 POKE46421,30
70 POKE46422,18
80 POKE46423,0
90 REM *** TRAVEL ***
120 CLS
130 PLOT5,10,"PRESS ANY KEY"
140 IFKEY$="" THEN140
150 WAIT100
160 CLS
170 PAPER0:INK3

```

```

180 PLOT18,9,"":PLOT9,13,"."
190 PLOT17,14,"":PLOT27,5,"."
200 FORZ=1TO15
210 A=(20*RND(1)):B=(35*RND(1))
220 PLOTB,A,"."
230 NEXTZ
240 H=0
250 C=10
260 D=10
270 FORL=1TO38STEP1
280 READG
290 FORK=38TO1STEP-0.6
300 PLOTG,D," "
310 PLOTG,G,"*"
320 Y$=KEY$
330 REM MOVEMENT
340 IFY$="A" THEND=D-1
350 IFY$="Z" THEND=D+1
360 IFY$=" " THENGOSUB470
370 IFK<10 THENPLOTG,C," "
380 PLOTG,D,">"
390 PLOTG,G," "
400 NEXTK
410 NEXTL
420 GOTO570
430 DATA 4,1,7,10,11,7,15,20,17,13,15
,0,10,1,4,8,20,15,17,10,12,18
440 DATA 23,20,16,10,11,7,8,17,24,18,
14,18,10,5,7,17
470 REM FIRE
480 ZAP
490 FORX=38TOCSTEP-1
500 PLOTX,D,"-"
510 NEXTX
520 FORV=38TOCSTEP-1
530 PLOTV,D," "
540 NEXTV
550 IFD=G THENK=0:H=H+1:EXPLODE
560 RETURN
570 CLS
580 PRINT"YOUR SCORE IS ";H
590 PRINT"DO YOU WISH TO PLAY AGAIN Y
/N"
600 INPUTQ$
610 IFQ$="Y" THENRESTORE:GOTO10
620 IFQ$="N" THEN640
640 END

```

FACTORIAL

The factorial of a number is the product of every number from one to that number multiplied together. The sign for a factorial operation is !. So, 6! is $1*2*3*4*5*6$, or 720. You can see that calculations may well be lengthy.

This short program from Martyn J. Hall works out factorials for you. You enter the number and its factorial comes up almost immediately. With most numbers, you will get an exponential answer, such as $2.6526286E+32$, which is 2.6525286 multiplied by 10 to the power of 32. This program will accept whole numbers from one to 32, and there's a repeat option at the end. It runs on all Oric computers.

```
5 REM *** FACTORIAL ***
10 CLS:PAPER0:INK1
20 INPUT"PLEASE ENTER THE NUMBER";N
30 IFN<10RN>32ORN<>INT(N)THEN20
40 C=1:D=1
50 REPEAT
60 D=D*C
70 C=C+1
80 UNTILC>N
85 PRINTN"! IS ";D
90 PRINT:PRINT
100 PRINT"DO YOU WANT ANOTHER GO (Y/N)";
110 REPEAT:GETA$:UNTILA$="Y"ORA$="N"
120 IFA$="Y"THENCLS:GOTO20
130 END
```

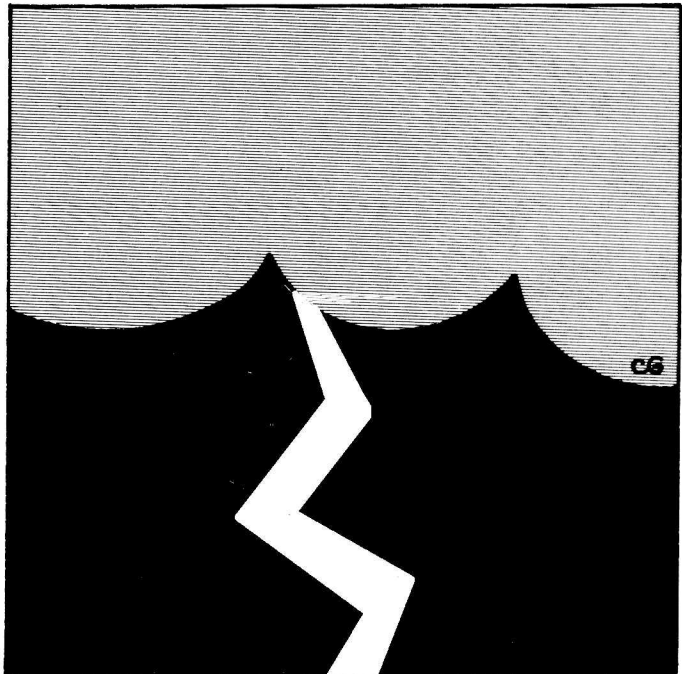
CRANES BREEDING

Here's a Quickie to annoy the neighbours! It is only six lines long, but uses all the sound channels to generate a noise that has to be heard to be believed. Lars Hansen of Norway believes the sound to be that of Cranes – breeding. You might have another description for it.

```
~ _
193 REM *** CRANES BREEDING ***
10 SOUND1,65535/(RND(1)*50+500),0
20 SOUND2,65535/(RND(1)*50+500),0
30 SOUND3,65535/(RND(1)*50+500),0
40 PLAY7,0,5,10
50 GOTO10
```

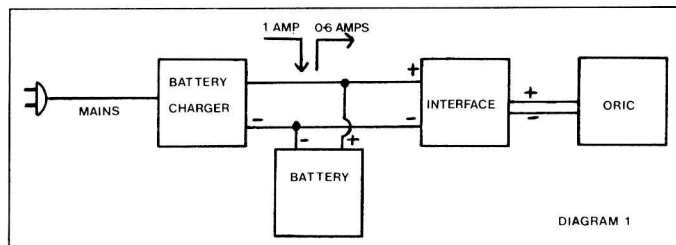
LIGHTNING

Watch bolts of lightning destroy a building when you RUN this listing. The HIRES display is used. A randomly generated bolt of lightning is generated, accompanied by an appropriate sound. If the bolt hits a section of a small building, part of it is destroyed and an explosion sounded. It is a short, simple listing but the idea could well be incorporated into more sophisticated programs. The program comes from Lars Hansen of Norway.



```
5 REM *** LIGHTNING ***
10 HIRES:CURSET115,196,1:CURSET120,196,1:CURSET125,196,1
20 CURSET110,199,1:DRAW0,-5,1:DRAW20,0,1:DRAW0,5,1
30 A=10+RND(1)*229
40 CURSETA,1,1
50 C=10+RND(1)*229
60 B=C-A
70 DRAWB,198,1:WAIT20
75 CURSETA,1,0:DRAWB,198,0:SHOOT
80 IFC>110ANDC<130THEN90
85 GOTO100
90 EXPLODE
100 WAITRND(1)*100+10
110 GOTO30
```

BATTERY POWER



There haven't been any power strikes for some time now, but there is always the chance of a local power failure. Oric owners who have just embarked on a very lengthy scientific calculation, or a long program of any sort, will want to be safeguarded from losing all when the power fails.

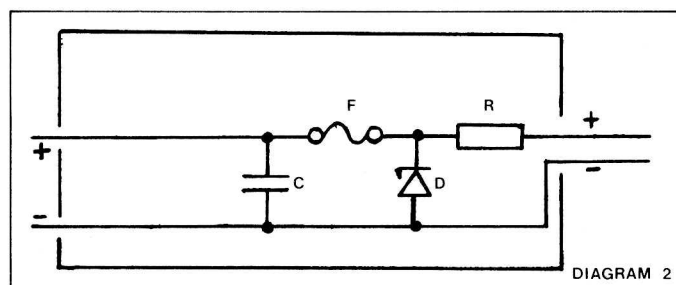
Jurgen Thiele of West Germany has sent us plans for a device that gives a battery backup to the Oric's power supply. Diagram 1 shows the idea. A 12V car battery is used. Normally it is trickle charged from the mains, but should the power fail, it will have enough power to run your Oric for about two days, assuming a 45 Amp/hour battery.

The battery charger is a standard charger. It is the interface unit that needs

constructing. It is shown in Diagram 2.

R is an 8.2 Ohm 10 Watt resistor. It gives a voltage drop of around 5V to protect the Oric's ICI from overheating. D is a 15V 10 Watt Zener diode. It will trigger the one Amp fuse if an input voltage of more than 15V is detected at the power input terminal. C is a ceramic 10 nF capacitor. The whole assembly is housed in a metal casing, with the resistor R in thermal contact so that there is no build up of excessive heat.

This device could also be used if you were to take your Oric out in the field, away from mains power supplies. With a battery powered cassette recorder and a battery powered miniature TV, you have a very portable package.



RANDOM SEED

Random numbers on the Oric may seem random, but that's not really true. They actually follow a sequence, and start at the same point whenever the computer is switched on.

Lars Hansen of Norway has a short little routine he uses to make sure the 'seed' random number is different. The start point will depend upon when

you press a button, so is unlikely ever to be the same. Insert lines 10 to 30 whenever you need a truly random number.

```
10 PRINT "PUSH ANY
20 REPEAT:
  A=RND(1):UNTIL KEY$<>""
30 A=0:CLS
```

66 Oric Owner

FUNCTION KEY

The Oric Atmos has a new key, next to the right shift and marked FUNCT. That's short for Function. However, there's no mention of the purpose of this key in the Atmos manual.

Geoff Philips has come up with a short routine that uses the FUNCT key. Within a BASIC program, the key is read when its memory location, #209, becomes equal to 165. It can thus be used as another SHIFT or CONTROL key, being pressed in conjunction with another key to initiate a certain action.

Geoff's demonstration of the FUNCT key in use prints out the number of the numerical key pressed simultaneously with FUNCT. Instead of printing the number, any action could be performed. Line 30 is the important line.

```
5 GOSUB 10: PRINT N:
GOTO 5
10 REM *** WAIT FOR
FNCT 1-9 TO BE PRESSED
20 REM *** NUMBER
RETURNED IS 'N'
30 REPEAT: N=VAL(KEY):
UNTIL N>0 AND
PEEK(#209)=165
40 RETURN
```



NEW THE OLD

We've all NEWed a long listing and then realized it wasn't copied to tape, or was need back in a hurry. Mr C. R. Burnham of Oxford has a method of undoing a NEW command.

Firstly, write down the first line of the program, i.e.

```
10 REM THIS IS A
PROGRAM
```

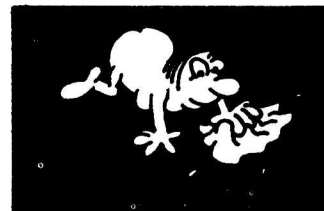
Then count the number of characters in the line, including spaces. Exclude the line number and space after it, but count a space after the last figure, and count only one for each BASIC command. For the above, REM(=1), 5 blanks and 14 characters make a total of 20.

Add six to that number. One is for the end of line signal, stored as CHR\$(0) in the memory. Two is for the length of the address at #1281 that points to the next line of BASIC. Another two is for the two byte address at #1283 that contains the line number of the first BASIC line, and another one is for the start of

the next line. That brings the total to 26.

Now, enter DOKE, #1281, 1281+26 RETURN and LIST. You'll have your old program back.

The tip works because the command NEW simply sets the address at #1281 to 0 without actually deleting the line of the program. Restore that first address and you restore the program. Try it – it works.



CHARACTER RESTORE

A tip for everyone who modifies character sets is to CALL F89B. This restores the standard character set, but none of the other start-up conditions.

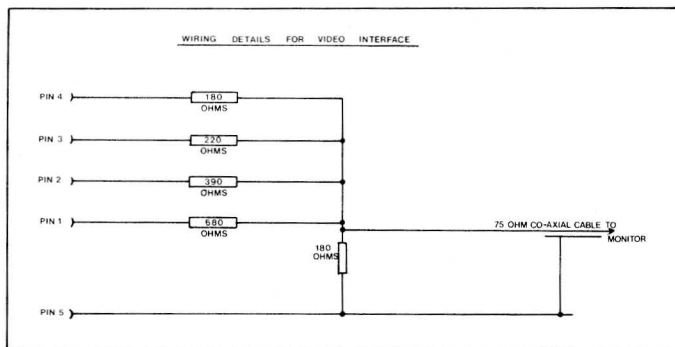
Hints & Tips

COMPOSITE VIDEO

The lead to feed a black and white monitor from the Oric's RGB socket (Oric Owner, Dec/Jan) generated a bundle of letters, all with suggested improvements. This, from Mr R. W. Vanlint of Enfield, was

the best.

It gives a composite video signal of about one volt DAP, with a $\frac{1}{2}$ V synchronising signal. If small resistors are used, the whole shebang could be fitted in a DIN plug.



STRING SEARCH

When debugging a program, wouldn't it be useful to be able to speedily find every occurrence of a certain string? This helpful program for C.R. Burnham of Oxford does just that.

```
4230 CLS:INK0:PAPER6:EOF=4230:REM START OF THIS
      PROGRAM
4240 PRINT:PRINT:PRINT:CHR$(4)
4250 PRINT " " CHR$(27)"A"CHR$(27)"JSCANNING ROUTINE
      FOR BASIC CODE"
4260 PRINT:PRINT:PRINT CHR$(4)
4300 INPUT"ENTER STING TO SEARCH FOR ";S$
4310 PRINT:PRINT
4320 PRINT"THE FOLLOWING LINES CONTAIN "S$
4330 PRT=1281:REM START OF BASIC "CHAIN"
4340 NXT=DEEK(PTR):REM NEXT BASIC LINE ADDRESS
4350 NO=DEEK(PTR+2):REM LINE NO. TO BE SCANNED
4360 PTR=PTR+4:REM SKIP OVER ADDR. OF NEXT LINE
      AND CURRENT LINE NO.
4370 LINE$="":REM SET TO NULL
4380 REPEAT:REM EXTRACT BASIC STATEMENT
4390 LINE$=LINE$+CHR$(PEEK(PTR))
4400 PTR=PTR+1
4410 UNTIL PEEK(PTR)=0
4420 REM SCAN LINE FOR S$ AND PRINT THE LINE NO. IF
      FOUND
4430 FOR A=1 TO LEN (LINE$)-LEN(S$)+1
4440 IF MID$(LINE$,A,LEN(S$))=S$ THEN PRINT NO,: GOTO
      4460
4450 NEXT A
4460 IF DEEK (NXT+2) <> EOF THEN PTR=NXT:GOTO 4340
4470 PRINT:PRINT"SCAN COMPLETED, ENTER 'Y' TO
      RESCAN";
4480 GET A$:IF A$='Y' THEN 4230.
```

S\$ can be any string, alphabetic or numeric, with the exception of BASIC commands, as these are only tokens and not stored in memory as such.

The listing is pretty self explanatory. Lines 4430 to 4410 extract one line of BASIC at a time. Lines 4420 to 4450 scan the line and if a match to S\$ is found, print out the line number. Line 4460 checks that the next line number is not the start of this subroutine. Note that the variable EOF should be set to correspond.

```
4305 INPUT "ENTER REPLACEMENT STRING"; R$
4307 IF LEN (S$) <> LEN (R$) THEN PRINT "MUST BE SAME
      LENGTH": GOTO 4305
4365 P=PTR : REM SAVE ADDRESS OF LINE
4440 IF MID$(LINE$,A,LEN(S$))<> S$ THEN 4450
4445 LINE$=LEFT$(LINE$,A-1) + R$ + RIGHT$(
      LINE$,LEN(LINE$) - (A+1)): REM INSERT NEW STRING
4454 X=1
4455 FOR A=P TO P+LEN (LINE$): REM REWRITE LINE TO
      RAM.
4456 POKE P,ASC(MID$(LINE$,X,1)):X=X+1
4457 NEXT A:
```

These two little routines would make welcome additions to any toolbox.

MC CLOAD

Paul Smith of Tadley, Hampshire, has found a way around the problem of loading Machine Code and BASIC programs together.

The problem arises when you CLOAD some Machine Code on top of a BASIC program, and then enter another line of BASIC. You get an OUT OF MEMORY error signal. CLOADING corrupts the End of BASIC pointer at DEEK(#9C). The solution to the problem is to write down the contents of #9C before Machine Code is loaded. Then restore the contents with DOKE#9C, xx after the Machine Code is loaded.

Should you forget to note the contents of #9C, DEEK(#501). DEEK the result of DEEK(#501) and continue this process until you get zero as a result. Then DOKE #9C with the last DEEK, +2. For

to the first line of this subroutine.

To shorten the routine, lines 4230 to 4320 and 4470 to 4480 could be omitted, along with all the REMs. Rewrite 4320 as 4320 EOF=4320: S\$="XYZ" where XYZ is the string you are searching for. To run the routine, simply enter RUN 4320.

A further modification could be to alter the listing so that a string R\$ takes the place of S\$. Inserting these lines will achieve that.



TEST DRIVE A DISC DRIVE



Why an Oric Micro Disc rather than a normal audio cassette?

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"Dear Oric Owner"

WE WON!

Last summer we read an advertisement for the Monte Carlo Rally game, by Express Software. It sounded good, so we sent off seven pounds and an entry to their competition.

The competition asked for a program to PRINT all prime numbers under 200 without using DATA statements. We sent in a simple solution, as every winner was promised a 'super prize'.

The game arrived. We played it once, the children played it once, then we chucked it – need I say more! Several weeks went by and we had a letter from Express. Alas, it wasn't a super prize – it was a letter from a man asking us (absolute beginners!) if we wanted to write software for them, and would we send a sample of our work.

I wrote back, asking where our prize was. Then, several months later and with all this forgotten, the postman brought our super prize – the Monte Carlo Rally game!

Does anybody out there want it?

Mrs I. S. Boyd, Stockport

LARGER PRINT

May I make a plea on behalf of those of us whose faculties have become less efficient with time, and ask you to print programs more clearly?

The listings in *Oric Owner* December/January either had large blank areas at the top and bottom of each column, or wide margins, or both. The size of print could have been increased without requiring additional pages, and larger print would have made them easier to read. I hope you can do something about this.

Alan White, Baldock

All we can say is "Is it better in this issue?" We'd like to think it is.

QUESTIONS

Some questions for you. . . Early last year, an extended BASIC for the Oric was talked about. What happened to it?

Secondly, could you be more critical in your reviews? You give little enough information on new products, and prices are rarely mentioned.

Thirdly, can you do a review of speech synthesisers? I believe William Stuart Systems do one for the Oric, as well as MCP.

Fourthly, your ads for *Oric Owner* show a boy with an Oric badge. Paul Kaufman is also pictured, wearing an Oric sweater. How about stickers, badges, T-shirts and so on for proud Oric Owners?

Karl Williams, Swansea

Some answers. . .

The new Oric Basic (V.I.I) is found in the Oric Atmos, and it is possible to upgrade the Oric-1.

We hope to be bringing more, better product news and reviews. However, the long lead times of Oric Owner sometimes mean full details are not available when a story is written.

We will be looking at speech synthesisers in due course – when we find out what's available.

Finally, we are investigating things like badges. For the moment, One Percent Screens of Unit 12, Star Lane Estate, Great Wakering, Essex, print an Oric-1 T-shirt costing £3.25, and a sweatshirt at £5.75. Try them for size.

STAR RATINGS

How about adopting a star ratings system for your software reviews? You seem to lack software reviewers and your reviews leave much to be desired.

Will *Oric Owner* go monthly? I certainly hope it will. Also, could you print your programs in larger type? My eye's hurt!

How will the introduction of the Atmos affect software? Will there be two versions of the one program or what? Finally, could you provide a listing of what software is available?

Mr M. B. Smith, Thame

We hope the reviews in this issue of Oric Owner are more to your liking, and we now have a small team of reviewers. As for monthly issues – it won't be long now. And, we hope the new look listings are an improvement. We also have a software listing, and there's plenty to list.

BASIC programs for the Oric-1 should work with the Atmos and vice versa. Machine Code programs may not be compatible. However, most software companies have details of the new ROM, and Atmos software is already becoming more widely available.

RING BINDING

Could I make a plea to book publishers through the pages of *Oric Owner*?

I have bought a number of books containing program listings for my Oric. While the listings are often very good, it is a tedious business typing them in. It is made more tedious by the fact that the books are bound in such a way that they never open out flat, and stay flat.

I would much appreciate it if books of programs could be ring bound. They could then be opened out flat and I'm sure that would make them far easier to work with. It might even be cheaper to produce than normal binding.

L. Miller, Stroud

CONVERSION

I am a little disturbed to read that there may be problems loading programs from the Oric-1 on to an Atmos. I have quite a few home made programs, none in Machine Code though, and I don't want to have to retype them all again if they won't load into my Atmos.

J. G. Recknell, Sidmouth

Some BASIC programs may load quite happily. However, the welcome tape supplied with the Atmos includes a short 'header' program, that when RUN will enable virtually any BASIC program to be loaded to an Atmos

SAINT ORIC?

My job is in the Chester Cathedral Shop, and I've been asked many odd questions there. We are often asked who is the patron saint of such and such.

It occurs to me that there is no patron saint of computer users, to whom they can pray when utterly baffled or frustrated. How about St. Clare, the 13th century Abbess and founder of the Poor Clares order?

T. E. Knapp, Chester

STRANGE SYMBOL

I have seen, in both *Oric Owner* and other magazines, the symbol '~', meaning cycles per second. I don't know how to obtain this character with the Oric-1.

T. P. Brodrick, Cumbria

That symbol is what we call a squiggle, and we know of no way to produce it intentionally. To prevent it, make sure the keyboard interrupts are turned off with call #E6CA.

ORIC SPEAK



You might show signs of anger at this point of reference

The cartoon and clue indicate a BASIC command for the Oric computers. Hold the page up to a mirror to see the answer.

CURSE

DISASTER AREA

Doggy Bone (Oric Owner, Feb/March) had a number of lines that may not have been clearly printed in some issues. Here they are...

1205 DATA 00040A1D170F0404
1206 DATA 0000020304180800

2040 PLOT 2,6,"H":PLOT 2,7,"H":
PLOT 20,6,"H":PLOT 20,7,"H"

2045 FORI=1TO11:PLOT
12+1,6,"I": PLOT
12+1,7,"I":PLOT 20+1,6,"I"

HOBBIT COMPETITION

Due to production difficulties, the closing date of the competition in the April/May issue was unreasonable. We will accept entries until June 30th, 1984.

Prizes are 50 copies of The Hobbit and to stand a chance of winning, you must find Hobbit-related words in a wordsquare. Back issues are available at a cost of £1.20.

Notice of Renewal

Before you throw away the envelope this issue of Oric Owner came in, look at the address label. If there is an R next to your name, it means your subscription should be renewed, and this is the last issue you'll get on your current subscription.

Fortunately, a new subscription won't cost as much as the old. We've been able to cut costs, so the next six issues will cost just £7.50, instead of £10.00. European subscriptions are £10.98 for six issues. Contact us for overseas rates: You'll find a form at the back of this issue. Alternatively, if you don't want to cut up the issue, drop us a line with a cheque made out to Tansoft Ltd. We look forward to having you with us for the next six issues.

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ATMOS ORIC 1

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English — Deutsch

- Full featured HIRES, multi-coloured design aid
- Suitable for 48K Oric-1 and Atmos computers
 - English and German languages
 - Keyboard overlay included
 - Picture save and load facility
 - 17 commands available

As market leaders in the ORIC Software field, IJK Software brought you these best sellers...



XENON-1

A true legend in computer software. This game topped the ORIC software charts in most high street stores during 1983, and became the overall best selling computer game in France for the same period, gaining rave reviews throughout the press.

"Uses the ORICS tremendous capabilities to excellent advantage...truly mind boggling...the graphics are absolutely superb, very smooth indeed...I can thoroughly recommend this program".

-WHAT MICRO, Sept. 1983

"This is the best arcade game yet available for the ORIC. The graphics and animation are superb".

-ORIC OWNER, Sept 1983

As fleet commander in the Xenon space academy, you must protect your home planet Radon from the Aards, Paratrons and the Zorgon battle star! This 100% machine code game features the smoothest, meanest arcade action around!

For the 48K ORIC-1 and ORIC ATMOS £8.50 inc.

ZORGONS REVENGE

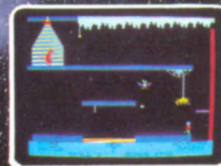
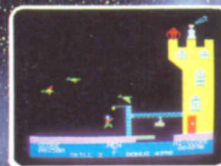
The second in the Xenon trilogy, written by the same author as Xenon-1, and continuing the high standard of excellence. Zorgons Revenge is well on its way to repeating the success of Xenon-1, and is again receiving rave reviews.

"This game certainly is the best arcade style effort I have yet seen on the ORIC. The graphics are superb...the author deserves praise...and I was impressed with the ease with which the game loaded, even though the cassettes contained 'fast' versions only". - PERSONAL COMPUTER WORLD GAMES SPECIAL, 1984

"The animation is smooth and detailed...this will be a solid gold hit". - COMPUTER CHOICE, Feb. 1984

"Some of the best graphics available for the ORIC...recommended". - PCG HIT, PERSONAL COMPUTER GAMES, Feb. 1984

"Quite the best game I've seen for the ORIC...superb graphics". - DAILY EXPRESS 10th Dec. 1983

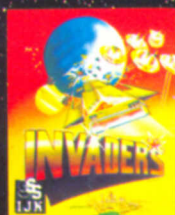


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Following their defeat at the hands of the Xenon fleet the Zorgons have captured the Xenon princess Roz, and have imprisoned her in their castle. You are commissioned to rescue her by scouring the four corners of the Zorgon Empire to capture the magic stones. These stones, guarded by the Quadnogs, Terrapods and many other strange beasts, are needed to bridge the bottomless chasm surrounding the castle, enabling you to achieve your goal. Each one of the many varied stages in this scintillating 100% machine code mission will test your arcade ability as never before.

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OTHER TITLES IN THE IJK SOFTWARE ORIC RANGE...



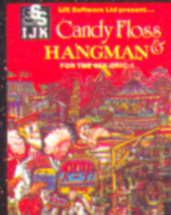
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Machine code arcade game for 16K & 48K ORIC-1 and ORIC ATMOS
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Intriguing adventure for 48K ORIC-1 and ORIC ATMOS
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REVERSE
Superb version of the board game for 48K ORIC-1 and ORIC ATMOS
£6.50 inc.

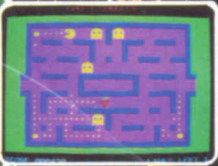
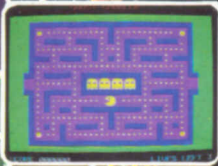
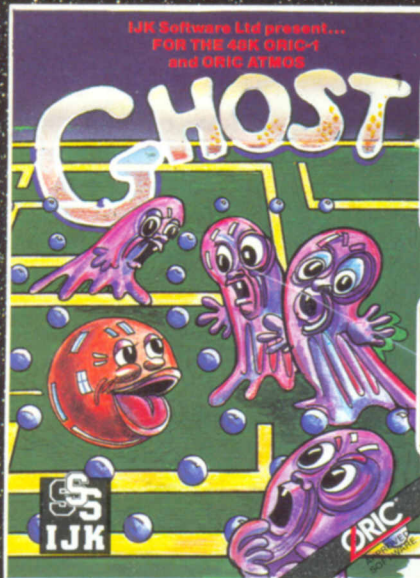


CANDYFLOSS & HANGMAN
Two top educational programs for 48K ORIC-1 and ORIC ATMOS
£7.50 inc.



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Arcade action for 48K ORIC-1 and ORIC ATMOS
£7.50 inc.

And now, to compliment the arrival of the fabulous New ORIC ATMOS, IJK Software bring you four exciting new games...



GHOST GOBLER

In this superb version of the record breaking arcade game,

you must guide the muncher around the screen, eating the dots to gain points. Eating the power pills enables you to chase and eat the ghosts, gaining bonus points. This all-action machine code favourite features ghosts, muncher, power pills, ghost box, tunnel, fruits, hall of fame, smooth action, etc., etc.

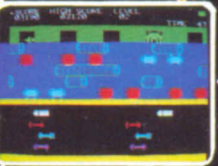
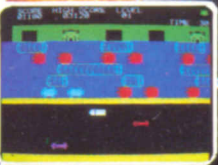
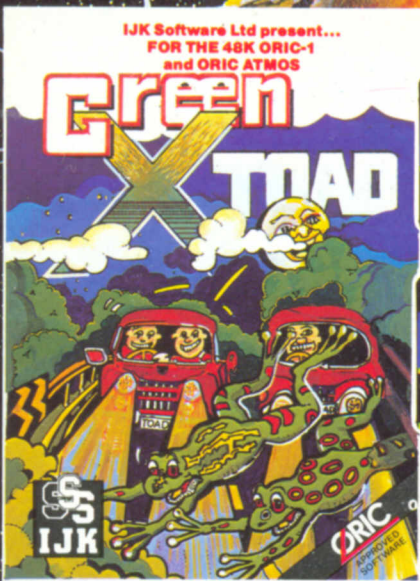
For the 48K ORIC-1 and ORIC ATMOS £7.50 inc.



PROBE 3

In this tremendous machine code arcade game, the aliens have you cornered. To survive you must destroy the fighters and evade their approaching plasma bolts and missiles. Features superb graphics, smooth action, hall of fame, etc., etc.

For the 48K ORIC-1 and ORIC ATMOS £7.50 inc.



GREEN CROSS TOAD

Help the toad across the road avoiding the traffic, then

help him cross the river on the logs and turtles to reach the safety of the lily pads. This machine code version of the popular arcade game features lanes of traffic, logs, diving turtles, jumping toad, snakes, flies, tunes, hall of fame, etc., etc.

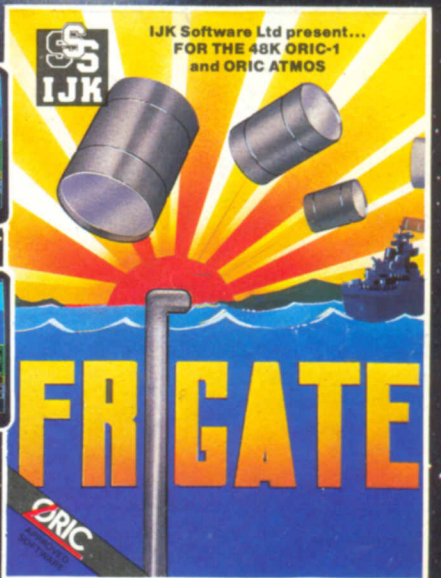
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FRIGATE COMMANDER

In this exciting simulation of modern warfare, you are in command of a frigate hunting the waters for enemy submarines and war ships. This excellent "trek" type game contains a highly colourful and realistic display and features radar, sonar, weapons, damage report, map of area, etc., etc.

For the 48K ORIC-1 and ORIC ATMOS £6.50 inc.



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